SPECIAL REPORT

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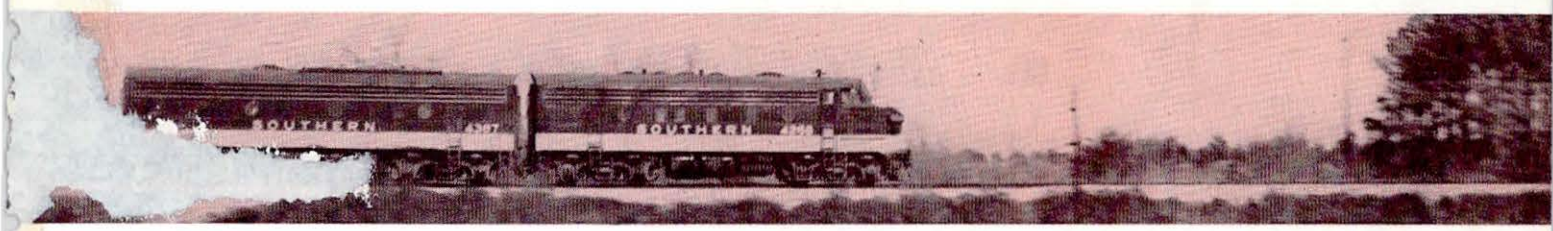
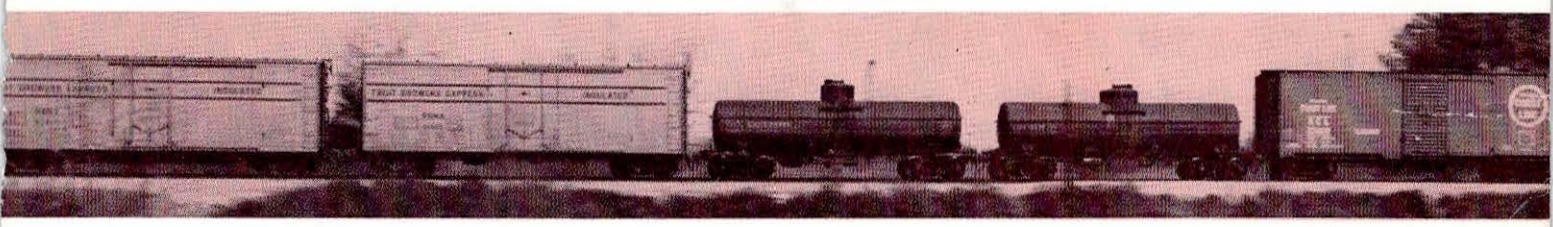
April 13, 1964

RAILWAY AGE WEEKLY



Why railroads are in-



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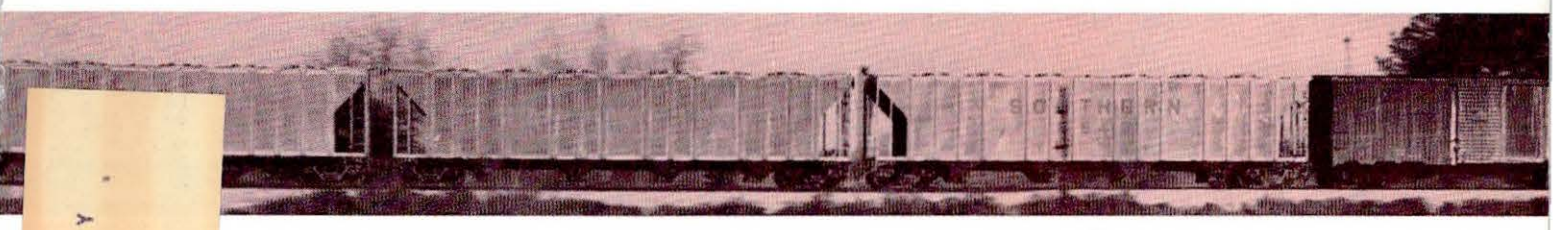

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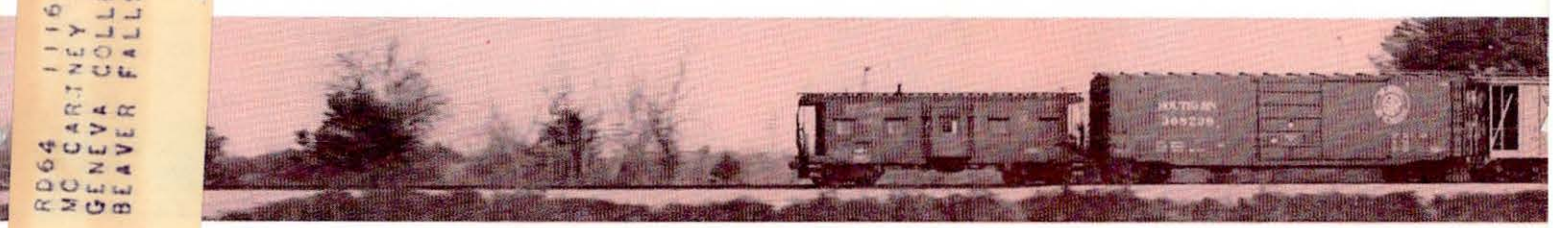

# of transportation p.26

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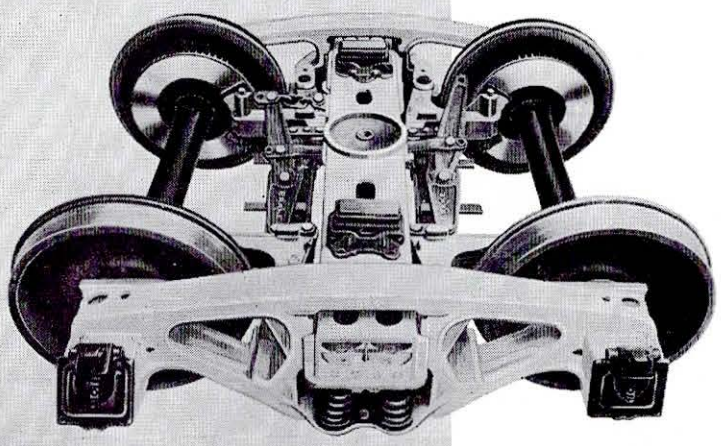

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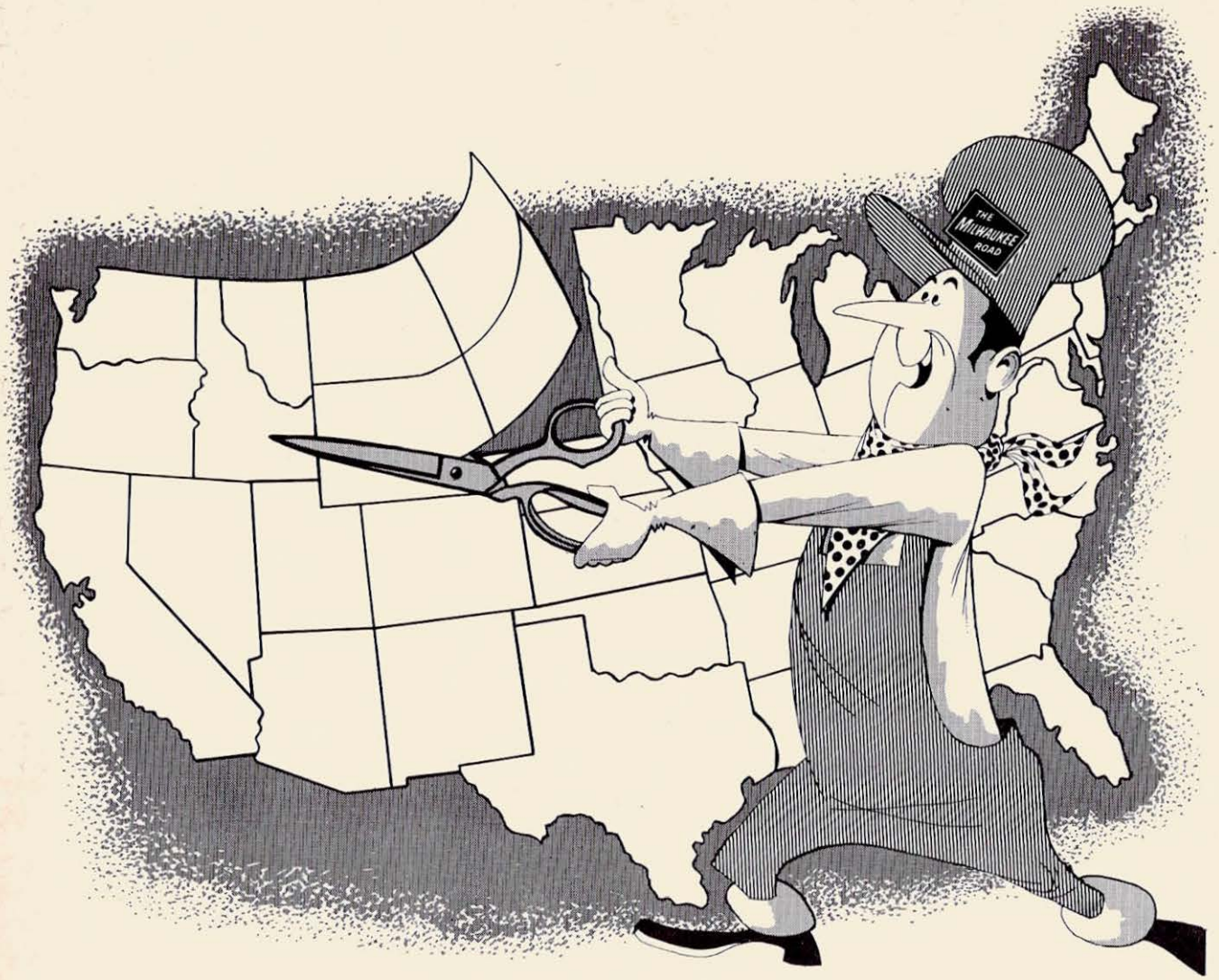


Transcontinental freight run cut almost 1/3

saving shippers one full day on freight to & from Chicago and the Pacific Northwest

One day's savings in time means one day's savings in inventories for shippers using The Milwaukee Road's fast freight trains: the XL SPECIAL No. 261 westbound, and the THUNDERHAWK No. 262 eastbound.

These two freight trains maintain daily schedules that in some cases equal (in others surpass) passenger train schedules. In addition to these highballing freight trains, The Milwaukee Road continues to maintain its regular time freight service between Chicago and the north Pacific coast.

Typical of the speed of the XL SPECIAL and the THUNDERHAWK is the daily schedule maintained by the westbound XL SPECIAL train No. 261, which leaves Chicago at 2:30 p.m. (late enough to permit connections with all eastern railroads' morning arrivals) and, in addition to its Chicago tonnage, makes pickups of cars in Milwaukee, the Twin Cities, and Aberdeen . . . and arrives in Spokane at 11:30 the second morning and Seattle-Tacoma the same evening.

SPEED SCHEDULE OF THE XL SPECIAL TRAIN NO. 261

Station		Time	Example
Lv. Chicago	XL Special	2:30 PM	Monday
Lv. Milwaukee	XL Special	4:30 PM	Monday
Lv. Twin Cities	XL Special	12:15 AM	Tuesday
Lv. Aberdeen	XL Special	7:05 AM	Tuesday
Ar. Spokane	XL Special	11:30 AM	Wednesday
Ar. Seattle	XL Special	8:00 PM	Wednesday

(Arrive Tacoma same evening.)

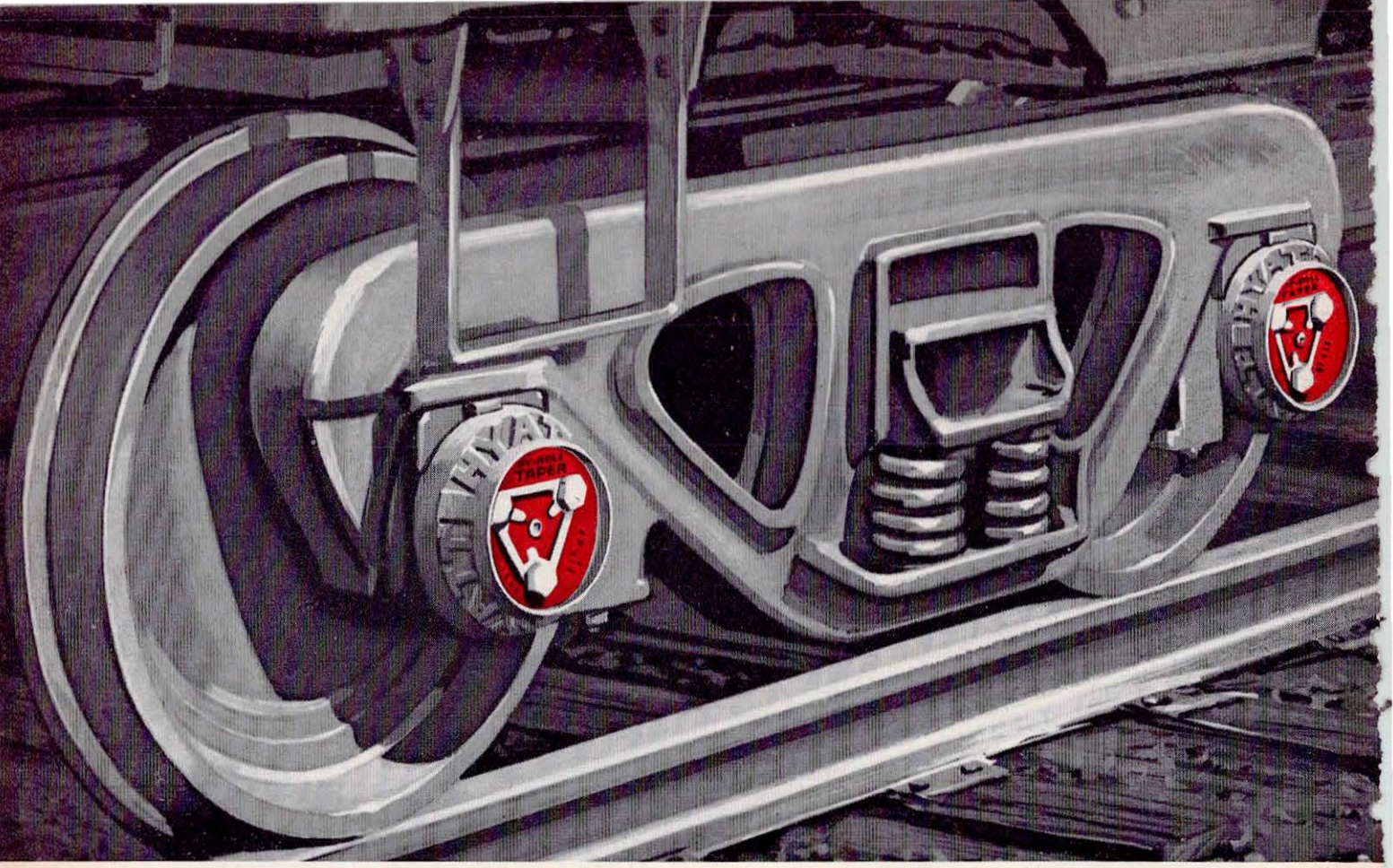
SPEED SCHEDULE OF THE THUNDERHAWK TRAIN NO. 262

Lv. Seattle - Tacoma	Thunderhawk	2:00 AM	Monday
Lv. Spokane	Thunderhawk	8:00 AM	Monday
Ar. Aberdeen	Thunderhawk	11:10 PM	Tuesday
Ar. Twin Cities	Thunderhawk	7:45 AM	Wednesday
Ar. Milwaukee	Thunderhawk	6:30 PM	Wednesday
Ar. Chicago	Thunderhawk	9:15 PM	Wednesday

THE MILWAUKEE ROAD

America's resourceful railroad

ANOTHER EXAMPLE OF
MODERN "PIONEERING" BY OUR
CREATIVE CREWS



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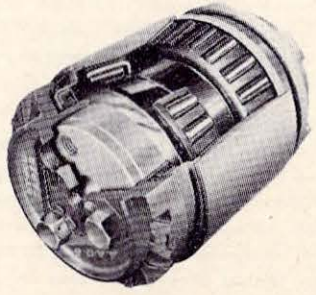
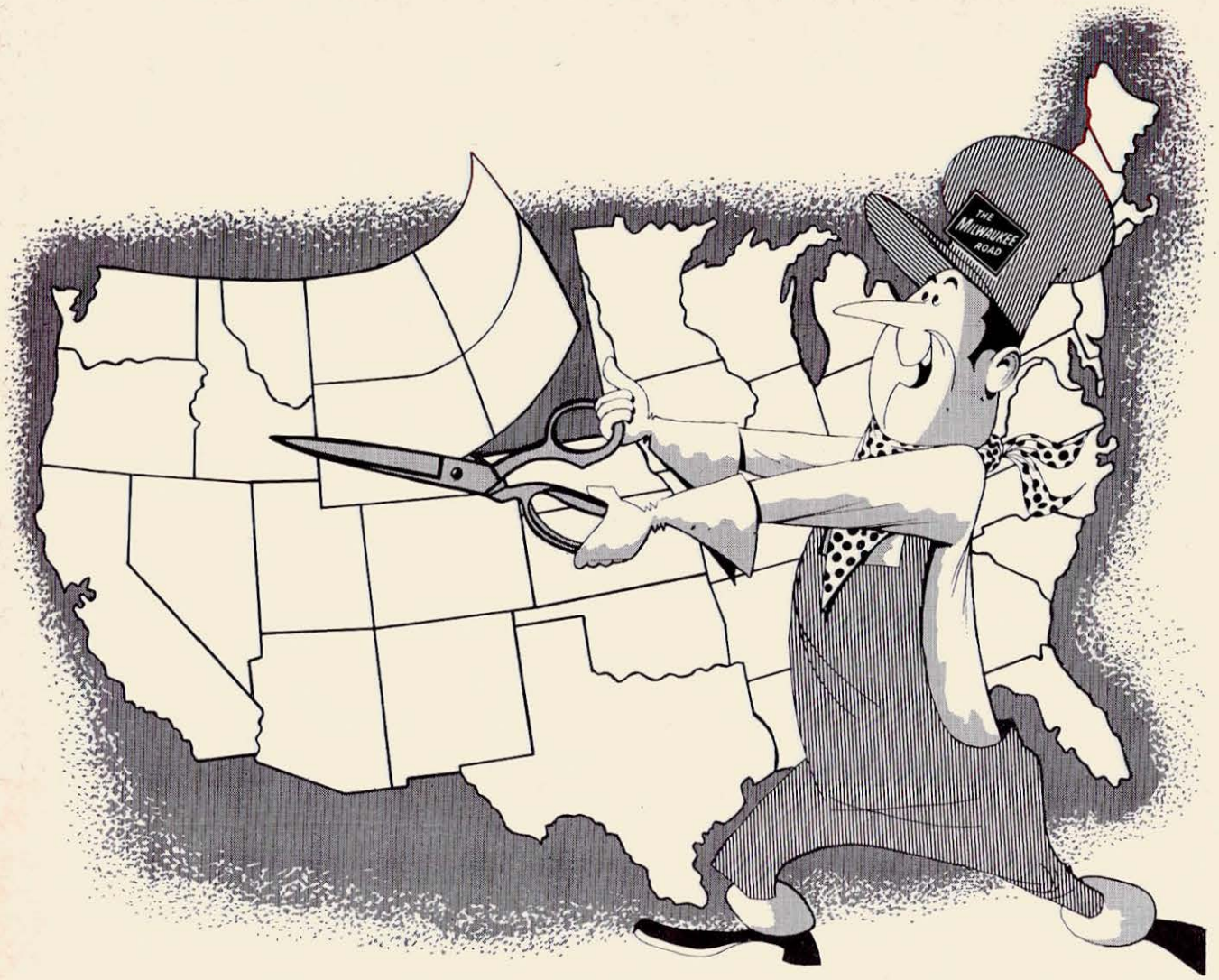


*AS OF DECEMBER 31, 1963

HYATT TAPERED BEARINGS
FOR NON-STOP FREIGHT

HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION, HARRISON, N. J.



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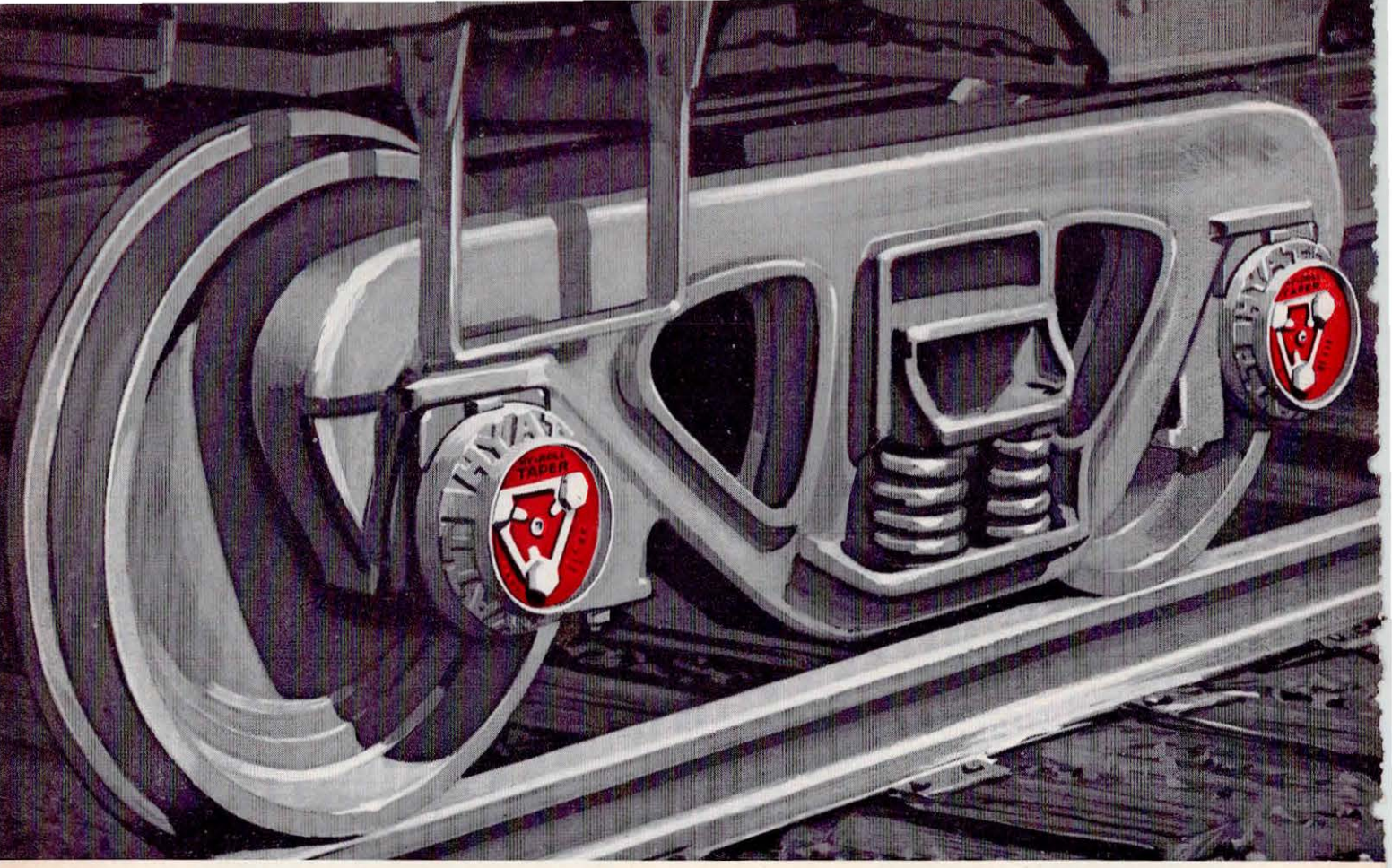

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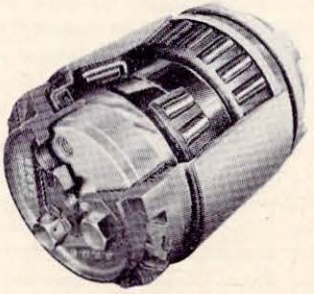

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RAILWAY AGE WEEK AT A GLANCE

April 13, 1964 • Vol. 156, No. 14

SPECIAL REPORT

Railroads are incomparably the world's most efficient form of transport . . .

No railroad man doubts it. But does the point always get across to others? This special report restates the idea in its simplest, most dramatic terms. It is designed to help railroaders tell their story. It is also designed to persuade legislators*—and their constituents, the public—that railroads are a great national resource that cannot be allowed to waste away.

1. **Rolling resistance of a steel wheel on a steel rail is fantastically low** . . . . . p. 26

2. **Manpower efficiency: In no other form of transportation can so few employees accomplish so much** . . . . . p. 28

3. **Near invulnerability to weather** . . . . . p. 28

4. **Compactness** . . . . . p. 30

5. **Fuel economy** . . . . . p. 32

If trains are so much more efficient, why are trucks, barges and planes able to do so well? . . . . . p. 36

*A copy is being sent to each member of Congress.

IC strike sparks crisis

The showdown came swiftly and dramatically, without warning, 'in the dark of night' p.11

The Action Page: Labor peace—Up to Uncle Sam

'Binding arbitration' is recommended for management-union disputes that negotiators cannot handle p.74

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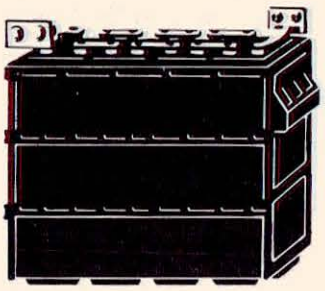

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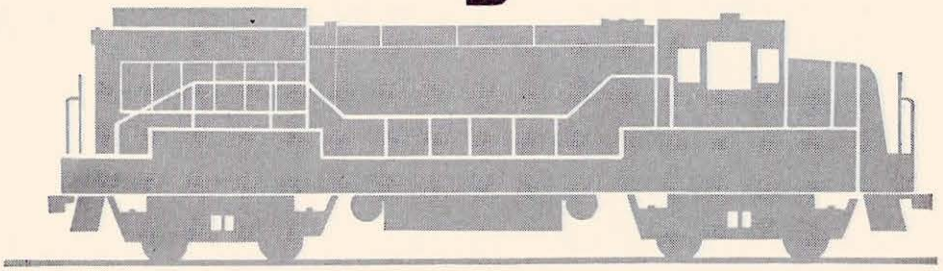

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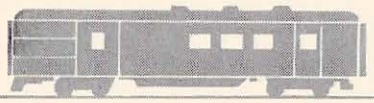
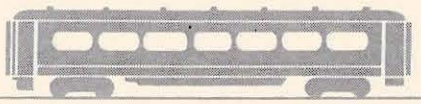
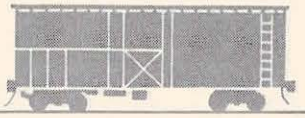


Head end car



Passenger car



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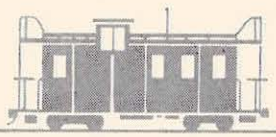

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SHORT AND SIGNIFICANT

More work for the arbitration board

The fireman-off and crew-consist parts of the work rules dispute haven't been forgotten—despite the sudden spotlight thrown on the secondary issues last week by the ops' strike against IC. Efforts are now under way to reconvene Arbitration Board 282. Reason: The parties need interpretations as to how the award shall be applied. It's now expected that the board will meet again early in May.

●

CN adds twin transcontinentals

Canadian National will add two coast-to-coast passenger trains, to be known as the "Panoramas," on its Montreal- and Toronto-Vancouver runs, starting May 24. The CN recorded big successes with its Red, White and Blue passenger fares, and intends to coordinate the schedules of the new trains with other passenger services in the Atlantic Provinces, thereby providing what the CN claims will be the first fully integrated coast-to-coast Canadian passenger schedules. Meanwhile, the CN and the CP are creating a Montreal-Quebec City pooled service passenger train, to be known as the "Champlain." The train goes into operation June 14, and will offer one-stop service between the two cities, covering the distance in three hours and 15 minutes.

●

Setback for Harris Bill

By an 8-6 vote, the House Rules Committee deferred action on granting a rule for House consideration of the Harris Bill (H.R. 9903). It could be reconsidered, although some observers feel the bill may be dead.

●

Passenger car orders may be on way up

Belief that "the decline in passenger car building is over" was expressed before the New York Society of Security Analysts by W. Irving Osborne, Jr., president of Pullman, Inc. Mr. Osborne saw the possibility of orders "in the next five years for as many as 2,500 urban and suburban transit cars and 1,400 suburban commuter cars," plus some main-line units as well. He also suggested the probability of "dramatic growth" for freight containerization.

●

REA streamlines paperwork with data processing

A new computer and data communications network is being installed by REA Express. When the complete system is operable in 1967, each of REA's 8,200 U.S. offices will be served through central transmitting offices in key cities. Each of these key offices will transmit shipment data to designated receiving cities, where machine printed and punched delivery cards will be prepared and made available to the correct REA office, pending actual arrival of shipments. In addition to the data communications network, regional computer centers will be set up to handle processing of shipment data and tariff schedules.

●

'It's cheaper to cheat'

"Illegal trucking has its root in the economic fact that very often under present day conditions it is simply cheaper to cheat." ICC Commissioner Charles A. Webb put it that way in an April 8 talk to the 1964 National Workshop Conference of the Committee Against Unlawful Transportation. His prescription for eliminating bootleg trucking: "Lower the cost of legitimate transportation while raising the cost of doing business unlawfully."

MONDAY MORNING REPORT

The IC strike—what touched it off?

The first reaction last week was surprise—shock. The second one was bewilderment—and that continued long after the first wave of "explanations" as to why four operating brotherhoods struck Illinois Central.

IC itself was at a loss to explain why. Newsmen who have been covering the work-rules dispute for more than four years had only guesses, and they soon ran dry of even the most far-out speculations. Only leaders of the brotherhoods had the real answers as to why— and the answers they eventually passed off (at a press conference five hours after the walkout began) seemed to be no answers at all.

The charge—refusal to negotiate

Local union officers, said the grand lodge vice presidents, had asked headquarters for authority to withdraw from service and it was granted. As simple as that. The accusation was that IC had refused to negotiate on the unions' rules demands of September 1960. But, brotherhood officers conceded, IC had received no specific request for local talks recently—as Louisville & Nashville and Southern Pacific did. IC, one union vice president admitted, did not fall into the ops' category of "worst offenders" (though another spokesman said later that IC had been discussed in connection with the attempts made to put pressure on L&N and SP).

Surprise for the ops?

There was little indication that the brotherhoods expected the one-two punch that followed—first, the notice that the railroads' rules proposals would be made effective in less than 48 hours; and then, Illinois Central's flat refusal to take the bait of the strike and go chasing into court for an injunction. The ops should have figured on promulgation of the rules. They'd been told often enough that it would come if they started walking out to push their own demands on the secondary issues. But IC's shunning of the courts may have been a stunner.

Five hours after the walkout started, union leaders—flushed with the success of a "100% effective" operation—told newsmen they were prepared for a long strike. But, said one, they didn't expect it to last: "We figure we'll hear from a judge before the day is over." The call never came. Instead, there was a summons from Washington, delivered to union chiefs and railroad presidents alike.

Did the unions read it wrong?

By sundown of strike day—little more than 12 hours after IC found itself out of business—there was a growing suspicion that the ops somehow, in some way, had made a sizeable error in judgment. Perhaps they saw some advantage in seizing the initiative. Perhaps they misread the signals as to the determination of the railroads generally and IC particularly to stand firm. Perhaps they saw some evidence of governmental or public sympathy which escaped most other observers. And perhaps they acted out of desperation.

Verdict—from time alone

Whatever the underlying reasons for the IC strike, it seemed—and seems—clear that the ops staked everything on the turn of a single card. Regardless of events this past weekend in the wake of the walkout, only the passage of time can show how high a card the ops held. Or if, in the final analysis, they had nothing.

because the ordinary "deadman" control could not respond...

Excerpts from
THE CALGARY (Canada) HERALD
Saturday, December 21, 1963

It was 9 A.M. July 5 this year near Lacombe.

A 10-car freight train was moving uncontrolled from a side track to the main railway line. The engineer was slumped unconscious over the controls with his foot jammed against a vital lever used to stop the train in an emergency.

The 80 mile-an-hour "Dayliner" from Edmonton to Calgary was due "any minute."

At the time of the incident, the train, which was switching cars at Lacombe, was equipped with a "deadman" control, but the engineer's foot was jammed on it and it could not be used.

Mr. Clark immediately moved the engineer from his seat and after placing him on the floor took control of the train and stopped it.

The engineer, N. C. Parks, has since recovered.

VAPOR ALERTOR* the dead man control

ELECTRONIC ALERTNESS CONTROL
the dead man control

CANNOT BE CIRCUMVENTED

The ALERTOR "deadman" control takes over when the Engineer can no longer perform his assigned duties.

It reminds him of his responsibilities should he become inattentive.

It protects the locomotive, the train and the Engineer when he is no longer alert.

It cannot be circumvented.

It always protects.

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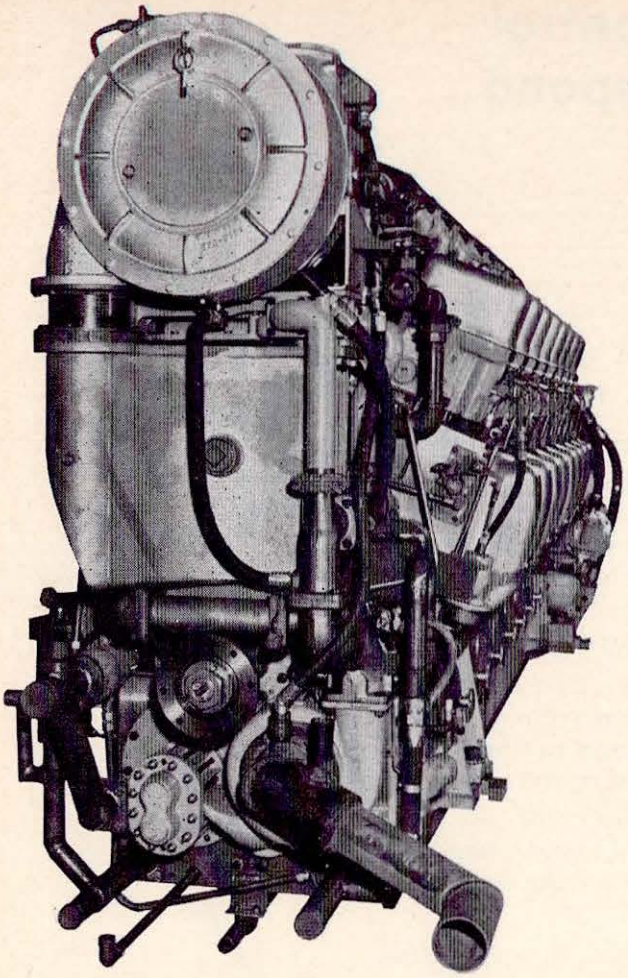

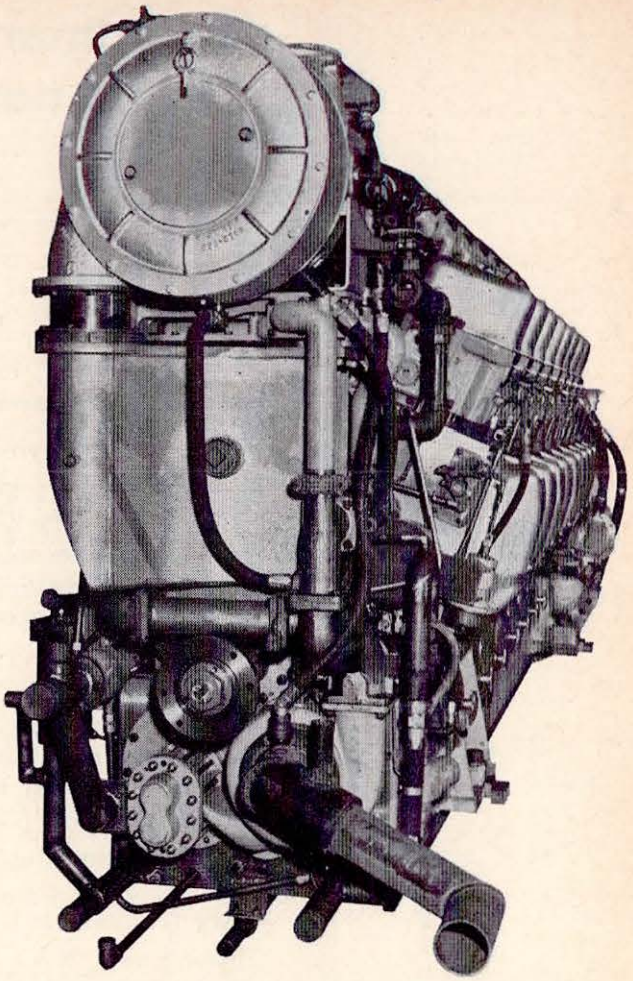

Which one has the "bargain" gaskets?

You couldn't tell by just looking at these overhauled engines. But put them in service, and you'll find out soon enough.

One will maintain compression. Give you full power when you need it. Without leakage. Because it's sealed throughout with ALCO gaskets.

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They cost too much.

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St. Louis, Missouri: 314 FL 1-8810.
Los Angeles, Calif.: 213 RA 3-8741.

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'THIS IS THE SHOWDOWN'

IC strike sparks crisis

The ops' walkout caught the IC by surprise last week—but a bigger surprise was in store for the unions as IC made its big decision. Here's the story of the crisis as it developed, swiftly and dramatically.

For a little while very few people thought the operating brotherhoods' walkout on the Illinois Central was the showdown in the struggle over the so-called "secondary issues" of the work-rules case.

However, within hours after the early morning walkout of IC's ops:

—Railroads from Maine to California were nailing up notices announcing changes in work rules effective last Friday morning.

—Union chiefs were issuing defiant statements of what the unions would do if the work rules changes were put into effect.

—Key railroad executives and union officers flew to Washington for an 8 p.m. meeting called by Labor Secretary Willard Wirtz.

Frantic efforts to avert a national tie-up were crowned by the eleventh-hour announcement Thursday night that a new breathing spell had been won. But the showdown had been costly. What actually happened on the struck IC gave some indication of the strike preparations that nearly all railroads were forced to initiate as the deadline neared.

● **How it began.** The crisis developed swiftly. First word for the industry came at 4:45 a.m. last Wednesday, when a telephone jangled at the bedside of Charles S. Condon, IC's suburban-service superintendent. An IC operating employee, in a guarded voice, told Mr. Condon: "I don't think it's right, but we're pulling trains off right now. We're all going out on strike."

Shortly thereafter trains pulling into IC terminals from Chicago to New Orleans were being abandoned by crews. In a few minutes, IC's top officers, roused by telephone calls, headed for the road's headquarters in downtown Chicago—with no idea as to why IC was selected for a strike.

● **Trains abandoned.** By 6 a.m some of IC's top officers were already in a huddle with the road's lawyers. By 7 a.m. angry calls from commuters left stranded on suburban train platforms were swamping IC's switchboard. IC's streamliner "City of Miami" was stopped at Jacksonville, Fla., with a trainload of Chicago-bound travelers; the "Panama Limited" was abandoned by its crew at Champaign, Ill., and other trains—freight and passenger alike—clogged mainlines at terminals throughout the road's 14-state territory.

As IC's startled management tried (before most Chicagoans were even out of bed) to sort out what had happened—the ops moved with the kind of precision that indicated planning and, obviously, tight security at the grand-lodge level.

"We began getting phone calls from Paducah, Waterloo, Iowa, Palestine, Ill., telling us that the ops' walkout was tying up the railroad," said Walter Cassin, IC's manager of personnel.

● **"In the dark of night."** Pickets showed up at IC facilities in New Orleans, Champaign, and Harvey, Ill., in the early morning hours—even before the morning press conference called by the ops at a Chicago hotel.

Minutes before the press conference, National Railway Labor Conference Chairman J. E. Wolfe angrily announced industry reaction to the IC walkout: "The operating unions' assault on the public, launched without warning in the dark of night against the Illinois Central and its customers, is typical of the unions' continued irresponsibility in the featherbedding dispute. As neither the railroads nor the public can tolerate this guerrilla warfare, the railroads plan to post their revised rules immediately as affirmed by the U. S. Supreme Court to be effective 12:01 a.m. Friday, April 10."

In Cleveland, Brotherhood of Locomotive Engineers Grand Chief Roy Davidson was equally adamant. There would be a nation-wide strike, "no doubt about it," if the carriers put new work rules into effect, he declared.

● **IC's big decision.** President Wayne A. Johnston of the IC and his staff, meantime, were in continuous meeting at the road's headquarters, wrestling with a decision of great importance to the industry—whether or not to seek a restraining order against the ops' walkout.

(Continued on page 43)

ICC publishes TOFC rules

The Commission devoted two years to a study of every aspect of piggyback operations. The result is a broad set of regulations that hopefully leaves room for future growth of the service.

The ICC's guidelines for piggyback

Defining piggyback

1. *Definition of TOFC service.*—Trailer-on-flatcar (TOFC) service means the transportation on a rail car, in interstate or foreign commerce, of (a) any freight-laden highway truck, trailer, or semitrailer (or the container portion of any highway truck, trailer or semitrailer having a demountable chassis); or (b) any empty highway truck, trailer, or semitrailer (or the container portion of any highway truck, trailer, or semitrailer having a demountable chassis) when such empty equipment is being transported incidental to its prior or subsequent use in TOFC service as defined in subparagraph (a) of this section.

Equal treatment

2. *Availability to all of TOFC service.*—TOFC service, if offered by a rail carrier through its open tariff publication, shall be made available to any person at a charge no greater and no less than that received from any other person or persons for doing for him or them a like and contemporaneous service in the transportation of a like kind of traffic under substantially similar circumstances and conditions.

Open-tariff service

3. *Use of open-tariff TOFC service by motor and water carriers in the performance of economically regulated transportation.*

(a) Except as otherwise may be prohibited by these rules, motor common and contract carriers, water common and contract carriers, and freight forwarders may utilize TOFC service in the performance of all or any portion of their authorized service through the use of open-tariff TOFC rates published by a rail carrier.

(b) Motor and water common carriers shall utilize open-tariff TOFC service only if their tariff publications give notice that such service may be utilized at their option, but that the right is reserved to the user of their services to direct that in any particular instance TOFC service not be utilized.

(c) Motor and water contract carriers shall utilize open-tariff TOFC service only if their transportation contracts and schedules make appropriate provision therefor.

(d) Tariffs of motor and water common carriers and contracts and schedules of motor and water contract carriers providing for the use of open-tariff TOFC service shall set forth the points between which TOFC service may be performed and the names of the rail carriers whose TOFC service may be utilized.

(e) Motor and water common and contract carriers utilizing open-tariff TOFC service in the performance of authorized transportation shall tender traffic to and receive traffic from rail carriers only at points which the motor and water carriers are authorized to serve.

Through routes, joint rates

4. *Joint intermodal TOFC service.*—

(a) Except as otherwise may be prohibited by these rules, any rail carrier or carriers subject to part I of the act may enter into through-route and joint-rate arrangements with any motor common carrier subject to part II of the act or any water common carrier subject to part III of the act, wherein TOFC service is to be provided either in lieu of, or in addition to, the authorized all-highway or all-water service of such motor or water common carrier.

(b) Motor or water common carriers may participate in joint intermodal TOFC service in lieu of their authorized all-highway or all-water service only if their tariff publications give notice that such service may be provided at their option, but that the right is reserved to the user of their services to direct that in any particular

CONTINUED

The ICC has prescribed piggybacking rules designed to achieve what it calls "our purpose and our hope to encourage the growth of this transportation phenomenon." The rules, effective July 6, were prescribed in Ex Parte 230, the investigation of trailer-on-flat-car operations which the Commission has had under way for nearly two years.

Generally, the Commission's report followed recommendations of Examiners Harold P. Boss and Richard S. Ries. Their proposed report in the case recommended like rules on the basis of a general finding that piggybacking operations should be left unhampered to continue their rapid development and growth (RA, Sept. 2, 1963, p. 13).

● **No fetters.** Thus, the prescribed rules should not inhibit present piggybacking operations. While the railroad industry's general position was that rules were "substantially unnecessary," there appears to be nothing in the prescribed regulations which would be very difficult for the industry to live with.

The most important Commission departure from the examiners' recommendations was its prescription of a rule requiring that all-rail piggyback services offered under open tariffs be made available to carriers as well as shippers. The effect of this is to qualify truckers and water carriers as railroad shippers, and it involves reversal of prior Commission determinations to the effect that a carrier could not also be a shipper.

The reversal was opposed by Commissioner Everett Hutchinson in a concurring-in-part opinion, and by the Commission's vice-chairman, Commissioner Charles A. Webb in a dissent. While the latter had much argument in opposition to letting carriers become shippers, its general purpose was to record Commissioner Webb's objection to the prescription of any rules.

● **Turbulent arena.** "The problems arising from the turbulent arena of intermodal competition," Mr. Webb said, "cannot be obviated by economic planning, or jammed into hard and fast policy molds, or resolved by the writing of ordinances. Such problems can be solved fairly and intelligently only by a form of case-by-case adjudication which reflects the spirit and the

signs of the times...

Identification signs and reporting marks for REALCO trailers are produced by Kux Manufacturing Co., Detroit, Michigan.

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THE NATIONAL RAILROAD TRAILER POOL

The ICC's guidelines for piggyback

Intermodal tariffs

instance such TOFC service not be provided.

(c) Tariffs embracing joint intermodal TOFC rates or charges, including Substituted Service Directories, if used, shall set forth the service covered by the published rates or charges; the points of interchange between modes of transportation; and the names of the carriers participating therein.

(d) Carriers participating in joint intermodal TOFC service shall interchange traffic only at a common point of service.

(e) Where joint intermodal TOFC service is to be performed in lieu of a motor or water carrier's authorized all-highway or all-water route, tariffs embracing rates or charges covering such service may provide for the performance of TOFC service for the entire line-haul movement.

(f) Tariffs setting forth through rates or charges for joint intermodal TOFC transportation may be published only with respect to commodities the transportation of which is subject to economic regulation throughout the entire movement provided for in such tariffs.

Distance limits

5. *Circuity limitations.*—

(a) Motor and water common carriers shall not participate in joint intermodal TOFC service which is to be provided in lieu of their authorized line-haul transportation, and motor and water common and contract carriers shall not utilize open tariff TOFC service, where the distance from origin to destination over the route including the TOFC movement is less than 85 percent of the distance between such points over the motor or water carrier's authorized service route; *provided, however,* that the Interstate Commerce Commission may grant relief from the provisions of this paragraph upon consideration of an appropriate petition.

(b) For the purpose of paragraph (a) of this part the distance from origin to destination over the motor or water carrier's authorized route shall be computed (1) if a motor carrier operating over regular routes, over its authorized regular service route, (2) if a motor carrier operating over irregular or a combination of regular and irregular routes, through any gateway point which it is required to observe, and (3) if a water carrier, over the most direct available all-water route.

Securing trailers

6. *Responsibility for placing and securing trailers.*—

(a) Railroads participating in TOFC service shall assume responsibility for the safe securing of highway trucks, trailers, or semitrailers (or the demountable container portions thereof) on the rail cars when moving over their lines; and, unless otherwise provided for by tariff, or in the case of connecting common carriers by agreement, railroads shall also assume responsibility for the safe placing of highway trucks, trailers, or semitrailers (or the demountable container portion thereof) on rail cars and for removing them from rail cars.

(b) Railroads participating in TOFC service have the right to refuse to accept for transportation in such service any highway trucks, trailers, or semitrailers (or the demountable container portions thereof) which do not conform to the motor carrier safety regulations prescribed by the Commission.

Publishing tariffs

7. *Tariff publication regulations.*—

(a) Each railroad performing or holding out to perform TOFC service shall publish, post, and file tariffs (itself or through an agent) which shall contain in clear and explicit terms all of the rates and charges for and the rules governing the leasing of equipment to any person using its TOFC service (whether by the railroad itself or by any person affiliated with or controlled by the railroad or any agents of the railroad), and other special services or practices, including charges for pickup or delivery service when such charges are in addition to line-haul transportation charges. Such tariffs shall also contain, in clear and explicit terms, all amounts to be paid to any shipper for the lease of any empty truck, trailer, or semitrailer (or the container portion of any truck, trailer, or semitrailer having a demountable chassis) when such empty equipment is being transported incidentally to its prior to subsequent use in TOFC service.

(b) No allowance shall be payable by a rail carrier to any shipper,

CONTINUED

genius of the common law."

Presumably, the all-rail piggyback services which truckers will be able to use include those offered under Plans II, III and IV, principally Plan III. That's ramp-to-ramp service with trailers furnished by shippers. Plan II is door-to-door service in railroad equipment and Plan IV is ramp-to-ramp service with trailers and flat cars furnished by shippers. Truckers are now restricted to use of Plans I and V. The former involves ramp-to-ramp transportation, under contractual arrangements, of motor-carrier trailers. Plan V is service performed under joint rail-truck rates over joint rail-truck routes.

While some railroads opposed extension of open-tariff services to truckers, the industry is on record in favor of it. That position was taken when the industry endorsed all recommendations of the late President Kennedy's Transportation Message of April 5, 1962. Those recommendations included the late President's call for legislation to: "Assure all carriers the right to ship vehicles or containers on the carriers of other branches of the transportation industry at the same rates available to non-carrier shippers."

The late President's message went on to explain that this change would "put the various carriers in a position of equality with freight forwarders and other shippers in the use of the promising and fast-growing piggyback and related techniques." Dissenter Webb identified this as the only Kennedy recommendation which called for increased regulation. He contrasted the Commission's endorsement of it with its opposition to all of the late President's deregulation proposals.

● **Free-wheeling interpretation.** The dissenting commissioner also said the late President's call for legislation to implement his recommendation reflected a "respect for the law" which "contrasts sharply" with the Commission's approach. The latter was a "free-wheeling interpretation" which disregarded statutory language and legislative intent, Mr. Webb said.

Meanwhile, the majority report had followed through from its statement of the Commission's purpose of encouraging piggybacking to say that TOFC service "is obviously no longer an infant." Explaining then why it had become necessary to reverse some prior Commission determinations, the report had this to say:

"Perhaps we might characterize it as a fast-growing teenager, healthy but not without some growing pains. Looking back on some of our past decisions—decisions which must necessarily affect the future of TOFC service because they contain definitions or restrictions

Fruit Growers Express Co. ordered 630.

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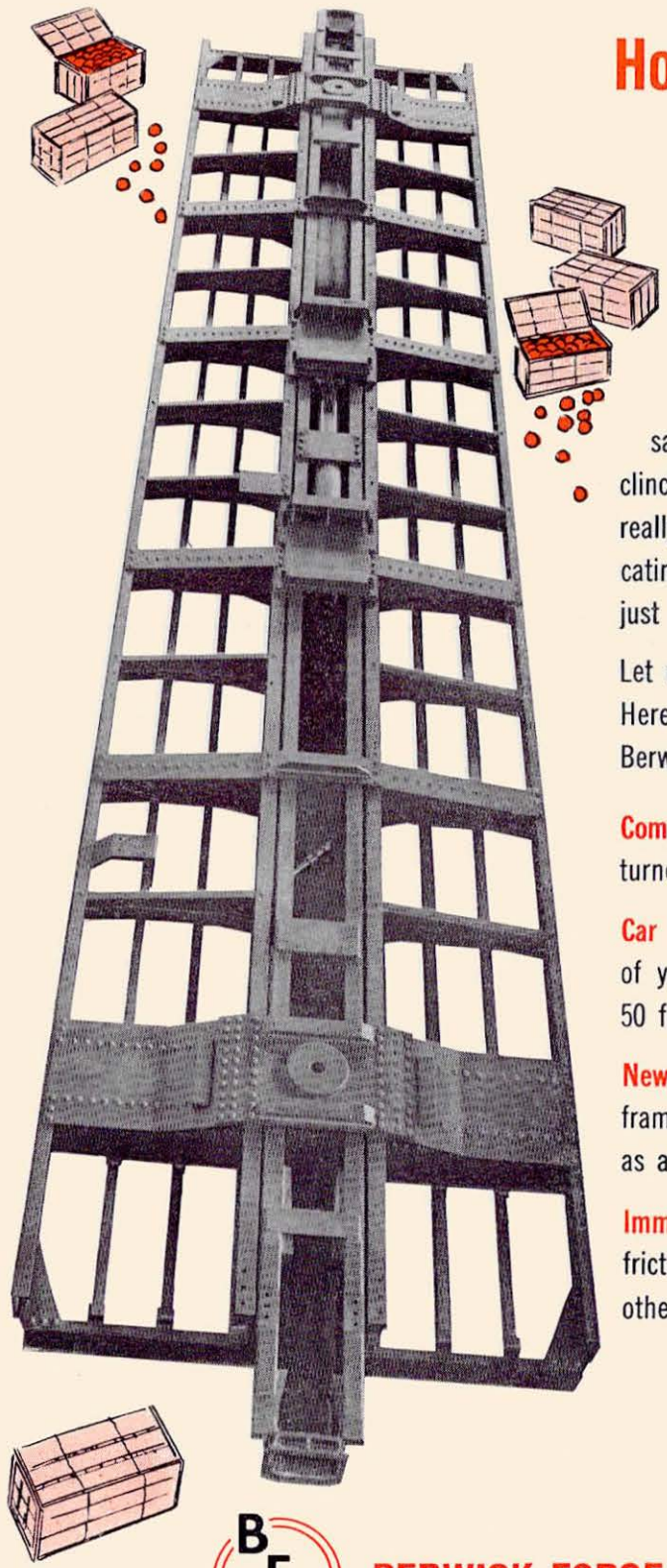

"One of the best underframes we ever received!" was the comment from a spokesman for Fruit Growers Express.

The trial underframe was completed a week ahead of schedule. This delivery (unusual to say the least) plus highest quality construction clinched the order for a total of 630 underframes. We're really proud of that here at Berwick Forge & Fabricating. Hope you don't mind us blowing our horn just a little.

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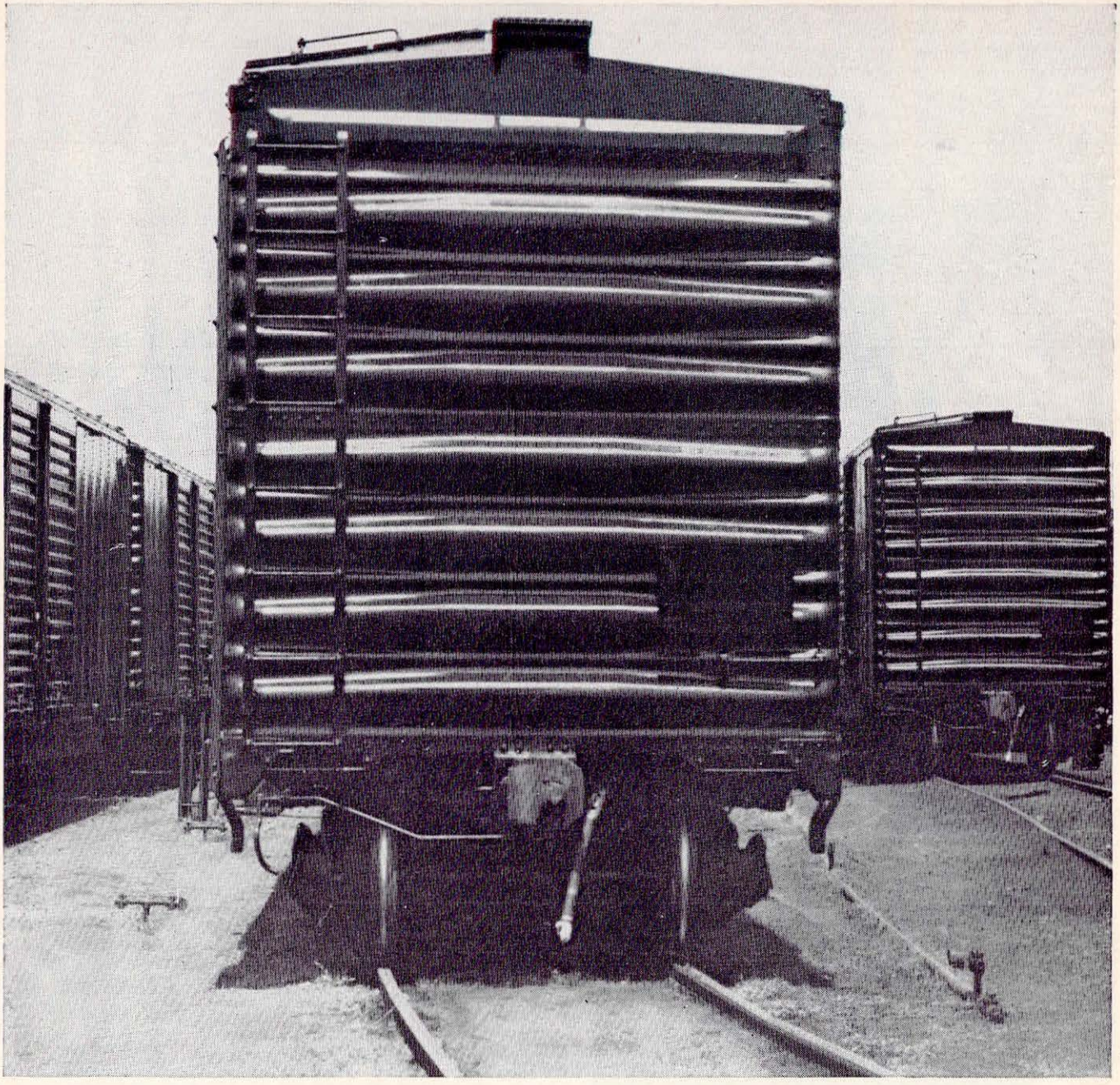

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which could hamper its logical development—it is apparent that most of them were rendered during the infancy of this transportation prodigy, and some might almost be said to have predated its birth. The fact that these decisions were handed down before anyone could have realized the important place TOFC service was destined to attain does not mean that they reached erroneous results, but it does mean that their pronouncements need to be re-examined in the light of modern developments."

● **Plan numbers O.K., unofficially.** As to the plan-number terminology for piggyback services, the Commission rejected the examiners' proposal that it be formalized. The proposed report recommended that the five plans be specifically defined in rules. The Commission recognized the convenience of the numbering system as a "form of shorthand" which has become "firmly ensconced in transportation language." And it used the "shorthand" in its report.

At the same time, however, the Commission avoided the use of plan numbers or other definitions in the prescribed rules. Instead, it prescribed the rules by reference to two major types of service—intermodal, which includes Plans I and V, and all-rail, which includes Plans II, III and IV.

This grouping represents "a genuine and useful distinction," the report said. It added, however, that the Commission sees it as something which "simply exists as a necesary element of TOFC service, not as one which has to be, or should be, imposed by definition."

Like Examiners Boss and Ries, the Commission rejected contentions of forwarders that Plan I services are unlawful. Forwarder arguments in support of that position "lack merit," the report said. It added that "the arrangement between the railroad and motor carriers, under which the railroad is to be compensated for its portion of the through service, is a division agreement specifically authorized by Section 216(c)" of the Interstate Commerce Act. In another place, the report had this to say:

● **How Plans I and V differ.** "The fundamental distinction between Plan I and Plan V operations, as we see it, is that rail and motor carriers serving different areas may combine their services in Plan V operations to perform a through service between origin and destination. Another difference is that the tariff rules covering the rendition of Plan I service specifically embrace a holding out by the motor carrier to perform an all-highway service at the election of the shipper, whereas the rates provided in Plan V joint tariffs

(Continued on page 60)

The ICC's guidelines for piggyback

freight forwarder, or consignee which renders any service or furnishes any instrumentality in connection with TOFC service unless (1) such service or instrumentality is one that the rail carrier is obligated to perform or provide under the applicable rate and (2) the amount of the allowance is published in tariffs on file with the Interstate Commerce Commission.

Pickup & delivery

(c) The area within which pickup and delivery service will be performed by a rail carrier offering to provide TOFC service shall be described specifically and the description published in clear and explicit terms in the tariff. It is not permissible to refer to decisions of the Commission for the description nor to state that the area within which pickup and delivery service will be performed is that defined by the Commission in a formal proceeding.

(d) All rail tariffs containing rates for TOFC transportation of property shall specify the extent to which such rates do or do not include the loading and unloading of property from or to the highway vehicle by the carrier. When charges in addition to the line-haul TOFC transportation charges or in addition to pickup or delivery charges, if any, are made for the loading or unloading of property, they shall be published in appropriate tariffs and filed with the Interstate Commerce Commission.

(e) Highway vehicles or rail cars provided by shippers or freight forwarders in connection with all-rail TOFC service, while on railroad premises, shall be subject to the storage and demurrage rules, regulations, and charges published in tariffs on file with the Interstate Commerce Commission.

Billing procedures

8. *Billing and notification rules.*—

(a) No shipment shall be transported in or in connection with TOFC service until the originating carrier has issued a receipt or bill of lading therefor.

(b) Carriers by tariff publication shall require that where a manifest or a statement of the weight or nature of a TOFC shipment is needed to determine the TOFC freight charges, such manifest or a certification by the shipper as to the weight or the nature of the shipment shall be delivered to the originating carrier within 24 hours after the shipment reaches its destination; *provided, however,* that where the weight of a loaded highway truck, trailer, or semitrailer (or the demountable container portion thereof) or the weight of the contents thereof is needed to determine rail TOFC charges, the rail carrier shall not relinquish possession of the shipment until it has received certification from the shipper as to such weights or has itself ascertained them.

Multiple movement rates

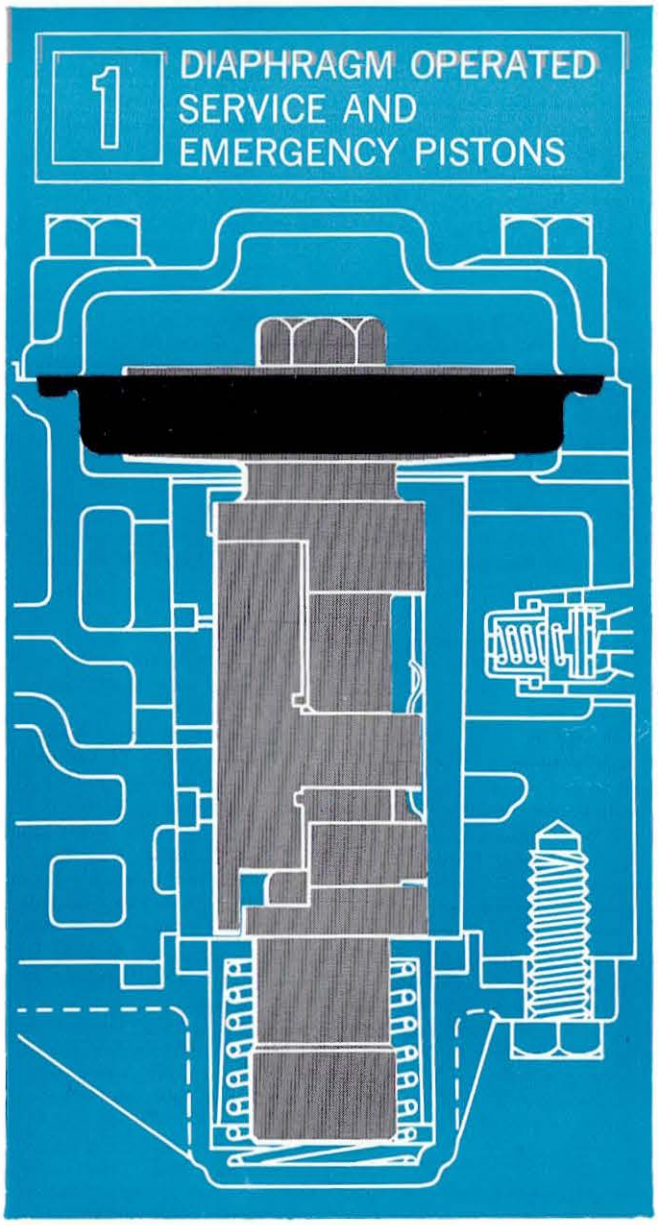
(c) Unless a rail carrier by appropriate tariff publication specifically provides otherwise, in clear and unequivocal terms, two or more highway trucks, trailers, or semitrailers (or the demountable container portions thereof) shall be tendered within one calendar day in order to qualify for any rate for the movement of multiple highway vehicles (or for the demountable container portions thereof).

(d) Carriers by tariff publication shall require that arrangements for the movement of highway trucks, trailers or semitrailers (or the demountable container portions thereof) containing explosives or other dangerous articles shall be made by a shipper or carrier with a railroad in sufficient time to permit the latter properly to placard and position the rail cars used for the movement and that shipments containing explosives or other dangerous articles shall not be transported in TOFC service unless the shipper, at the time of tender to the originating carrier, certifies that the shipment complies with the Interstate Commerce Commission's regulations governing explosives, and other dangerous articles as described in 49 C.F.R. 71-78.

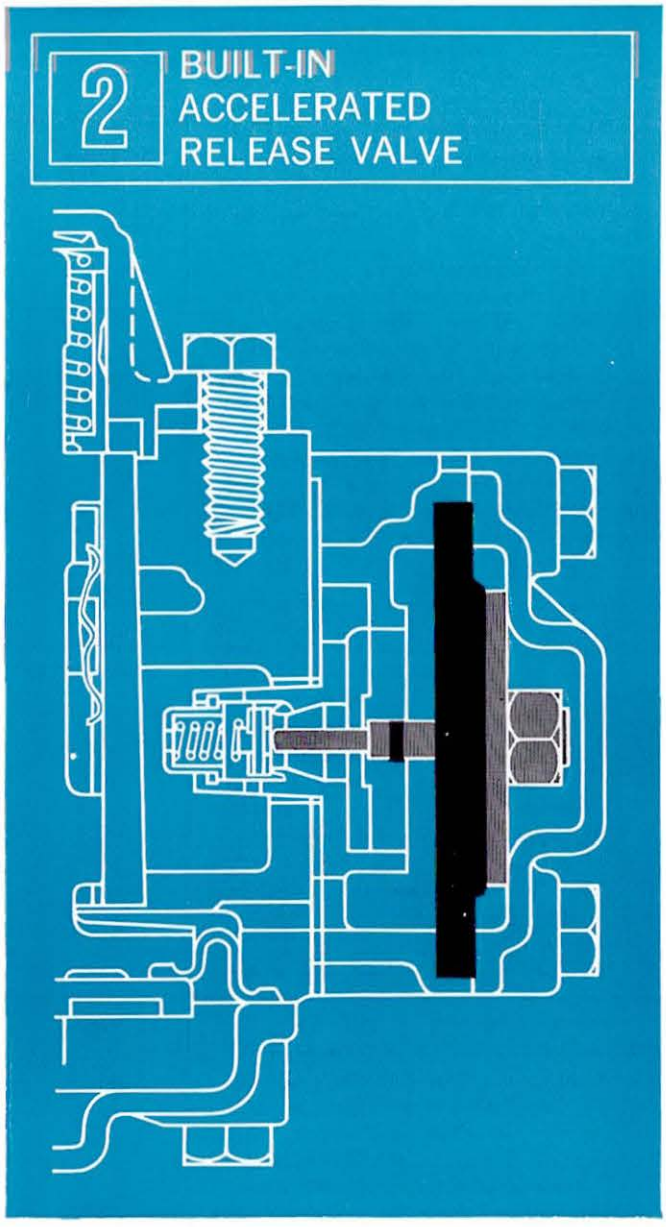
All-freight rates

(e) All-freight (all-commodity) rates that are restricted to apply only when not more than a designated proportion of a shipment consists of a single article shall be made subject to tariff provisions which (1) shall describe in clear and explicit terms the conditions under which such rates apply, (2) shall contain or refer to a commodity classification, such as the current Uniform Freight Classification or a designated tariff, from which it can be determined what constitutes a "single article" for purposes of the all-freight rate, (3) shall require certification by the shipper of the percentage which the weight of a given article bears to the weight of the entire shipment, and (4) shall specify the means by which the applicable rate will be determined should a shipment fail to qualify for the all-freight rate because it contains more than the designated proportion of one article.

Include the ABD Control Valve as



Longer life—reduced maintenance. By eliminating piston rings and ring oil the ABD Control Valve assures uniform functioning through a longer service period without requiring cleaning and repairs. Vertical mounted diaphragms are less susceptible to vibration, give positive response to pressure differentials and provide consistent operation without variable ring leakage and friction.



Eliminates stuck brakes—provides faster brake releases. Accelerated release valve speeds both service and emergency releases. Prompt restoration of brake pipe pressure moves the service piston to accelerated release and stimulates recharge on adjacent cars. Release on the last car of a 200-car train is approximately 17 sec. compared to 75 sec. on today's trains. Running releases can be made at low speeds without risking break-in-two.

The ABD Control Valve is designed to provide longer service periods without cleaning and repairs. The improved operation of the ABD Control Valve will provide the high degree of reliability and flexibility required for today's modern railroads. For more information, see your Westinghouse Air Brake Representative or write for our free booklet.

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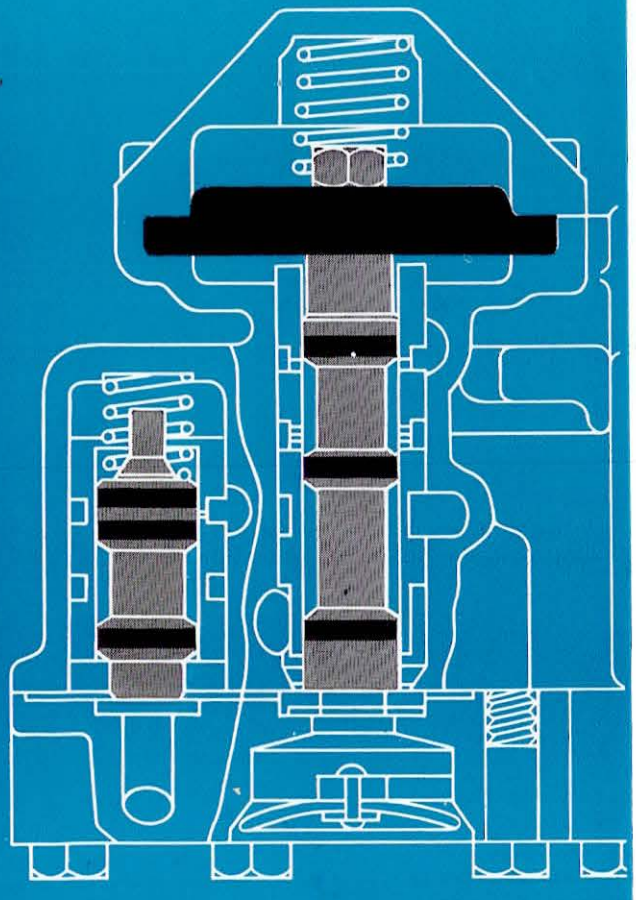
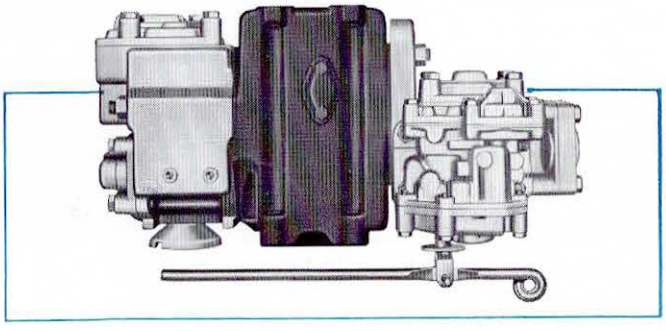
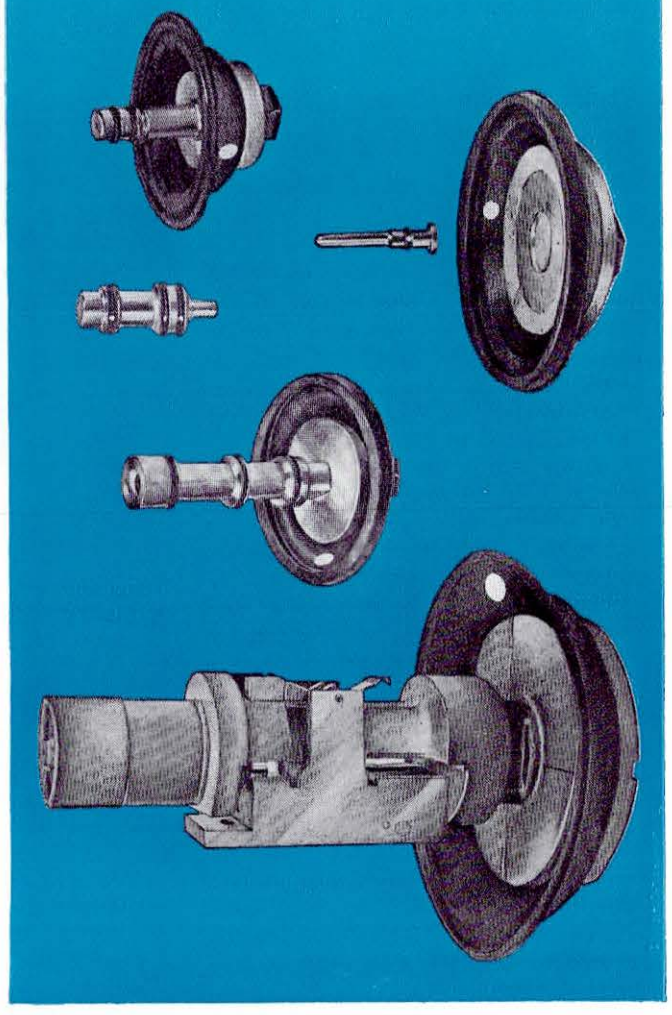


Simplifies installation—single handle operation. The diaphragm-operated integral release valve is rubber sealed for low leakage and long life. Operates to insure brake cylinder exhaust—remains open until brake pipe is recharged. One handle controls both draining of reservoirs and release of brake cylinder pressure.



4 WHITE MARK RUBBER PRODUCTS



Flexibility with superior performance. Diaphragms, seals, check valves made of superior White Mark Rubber, are designed to retain their original characteristics in adverse environments over greatly extended temperature ranges. Diaphragms operate on specific differentials for more reliable performance under extreme operating conditions. Freedom from frictional wear and ring leakage means longer service. Replacement without special technical skills means lower maintenance costs.

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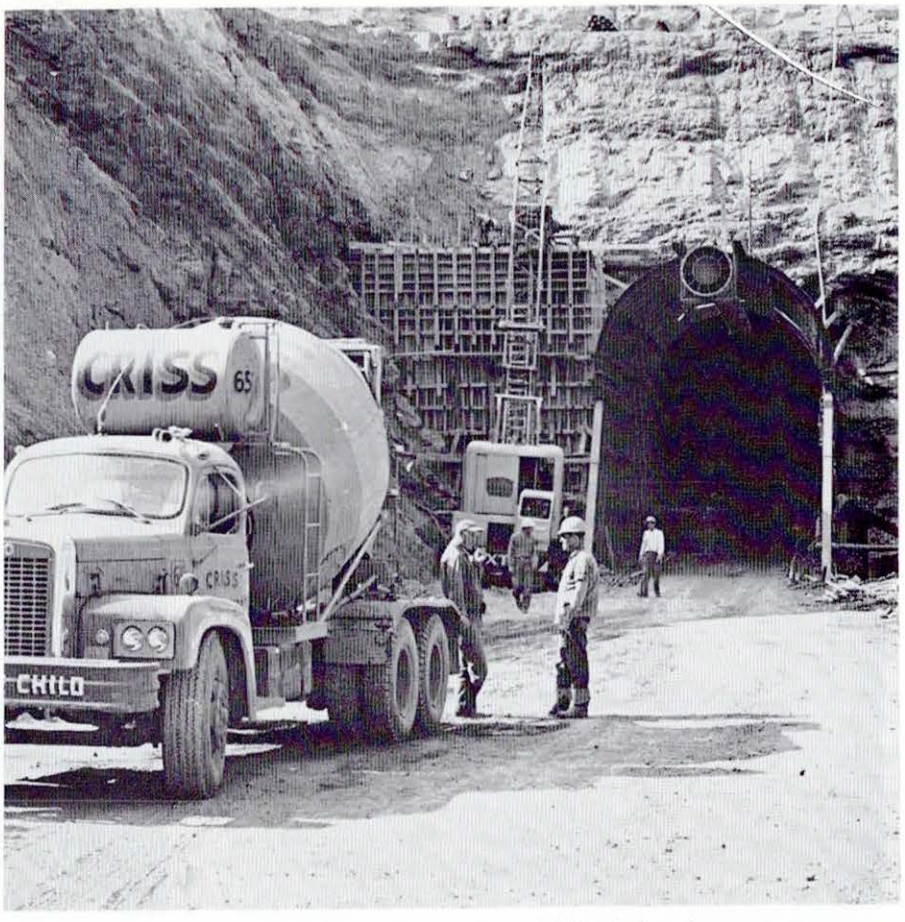
Modern techniques speed tunnel job

Construction of an 1,840-foot bore on the B&O was completed three days ahead of schedule.



Transit-mix concrete truck waits at the north portal to deliver its load of concrete to a pump inside the tunnel. Concrete came from batching plant erected at the site.

When a contractor's crew undertook to drill an 1,840-foot tunnel on the Baltimore & Ohio the men were up against a deadline they knew would be hard to meet. The single-track, concrete-lined tunnel, they were told, must be completed in 120 days.

It was—with time to spare. Seven weeks after the work was started, the two drilling crews, working in shale from both ends, holed through at the approximate center of the bore. The concrete-lining work, proceeding both ways from the center, was finished 117 days after the job began, three days ahead of schedule.

● **Equipment and planning.** Careful planning and coordination of the work were doubtless important factors in helping the men to beat the deadline. Keeping the work going on an around-the-clock, seven-day-a-week basis was another. But of even greater importance was the array of modern tunnel-building equipment and techniques that the contractor brought into play to help meet the challenge.

Construction of this tunnel was part of an $8.5-million project carried out by the B&O to eliminate restrictions to piggyback traffic imposed by 18 undersized tunnels on an 80-mile section of main line through the Allegheny Mountains between Clarksburg, W. Va., and Parkersburg. At seventeen of the tunnels the restrictions were removed by such expedients as lowering the floors, raising the roofs and setting back the walls, daylighting and constructing open cuts on new alignments (RA, Nov. 11, 1963, p. 12).

● **Why tunnel was needed.** At the eighteenth tunnel—No. 21—the original plan was to enlarge the existing bore. But when bad rock was encountered it was necessary to seek another solution. The plan adopted was to construct a new tunnel on an alignment about 80 feet from the old bore. The contract for building the new tunnel, a $3-million job, was won by a Baltimore contractor, C. J. Langenfelder & Son, Inc.

So that all work on the 80-mile segment could move ahead without interruption from trains, B&O management had detoured all traffic over a branch-line route. But the schedule for restoring traffic over the main line imposed a deadline of 120 days for completion of the new tunnel. Even before plans for the tunnel had been completed, the contractor had a fleet of heavy grading equipment on the ground excavating the overburden at the approaches. This fleet was composed of seven Euclid TS-24 twin-engine scrapers.

● **Approach rock blasted.** After the scrapers had done their job, there remained about 425,000 cubic yards of excavation which was about 90% rock. This was drilled and blasted. The shot rock was loaded for disposal by two Northwest 80D shovels into a fleet of International Payhaulers and Koehring Dumptors.

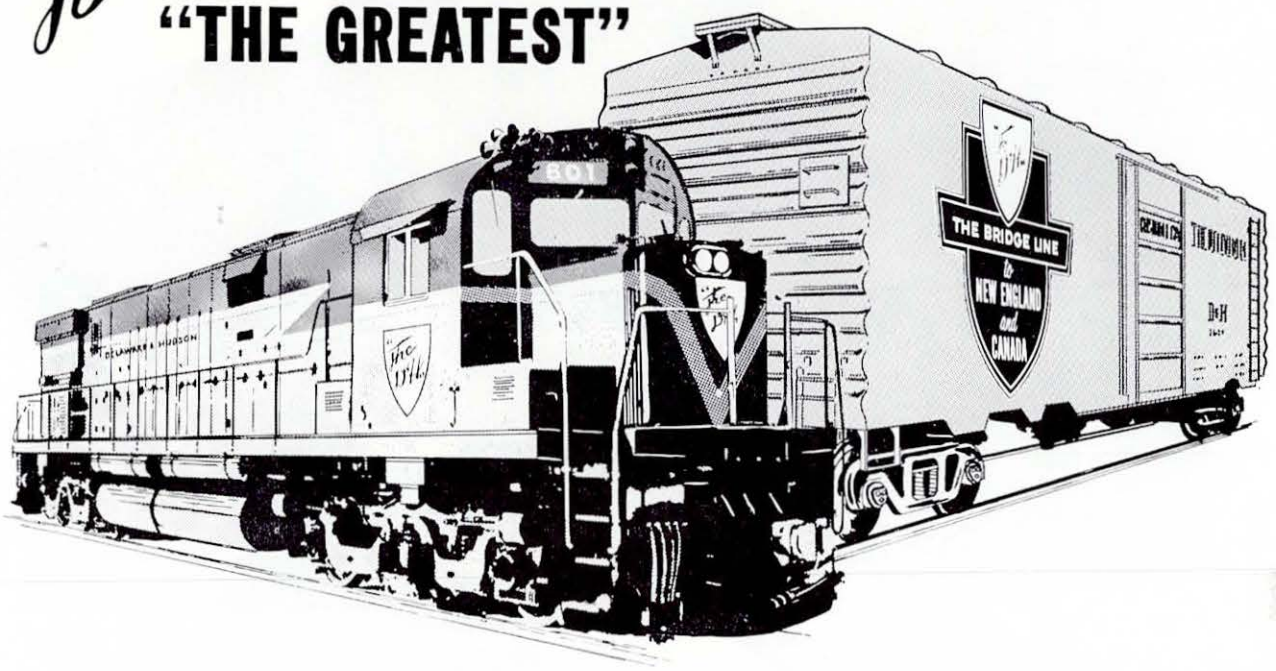
Tunnel drilling work was started at both ends as soon as the excavation work in the immediate vicinity of the

(Continued on page 44)

Concrete was forced into forms by this pneumatic pumping unit which was supported on a wide-gauge track.

"the D&H"

New Locomotives and Box Cars to be "THE GREATEST"



The D. & H. is dramatically continuing in 1964 its long established policy of constantly improving the quality and quantity of its service.

The new locomotives that will be added to its fleet in April will be the largest single engine diesel electric locomotives in the nation and the most powerful ever operated on The D. & H.

The D. & H. is proud of the large fleet of new type box cars that will shortly be delivered. They are designed to meet the special requirements of D. & H. customers. The cars measure 50 feet in length and have a capacity of 70 tons, with many new features including roller bearings and long-travel cushioned underframes. Some will be insulated and others equipped with unique devices to prevent damage to cargo.

The program to place the entire main line of The D. & H. under cTc . . . . Centralized Traffic Control . . . . which has been under way for several years, will be completed in 1964.

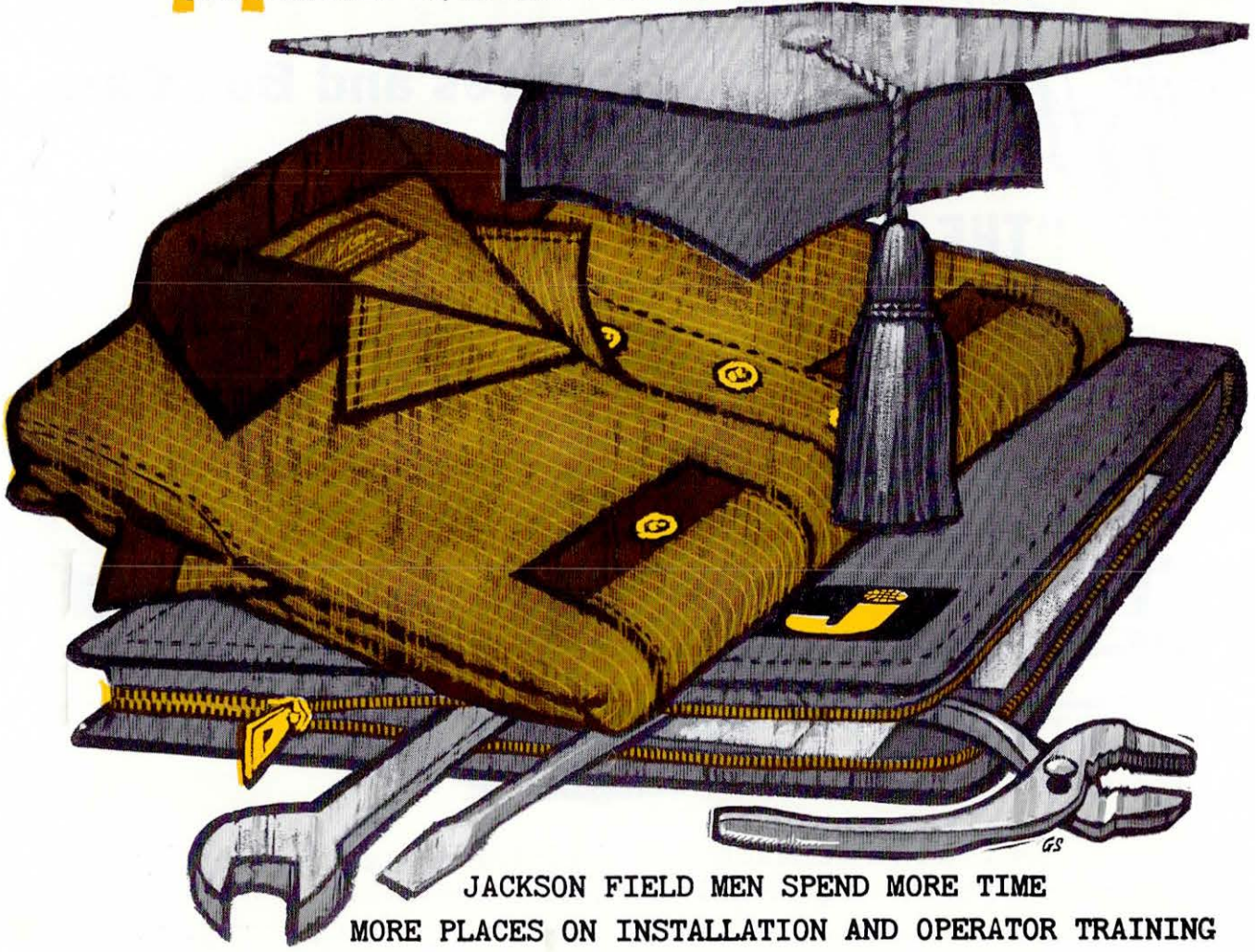
The large expenditures involved in these improvements will redound to the benefit of D. & H. customers in faster and better service and are glowing evidence of the confidence which The D. & H. has in its future and in the future of the communities which it serves.

"the D&H"

DELAWARE & HUDSON RAILROAD
CORPORATION

The Bridge Line Connecting the South and West with New England and Eastern Canada

JOB VERIFIED EQUIPMENT FOR THE RAILROAD INDUSTRY



JACKSON FIELD MEN SPEND MORE TIME MORE PLACES ON INSTALLATION AND OPERATOR TRAINING

Putting Jackson Vibrators equipment into initial peak performance is only part of the installation procedure, standard with Jackson. In addition, operators are thoroughly indoctrinated by Jackson field men. Equipment is never put into full service until Jackson experts are completely satisfied that operators are sufficiently trained for high production output. This is another reason why Jackson equipment is Job Verified. And it's a big reason why Job Verified Jackson equipment will provide you with the durability and flexibility necessary for economical and highly efficient operation.

In addition, "on-the-job" experience provides Jackson's expanding Research and Development organization with factual information pointing to new products and innovations planned to help increased your efficiency and lower your operating costs even more.

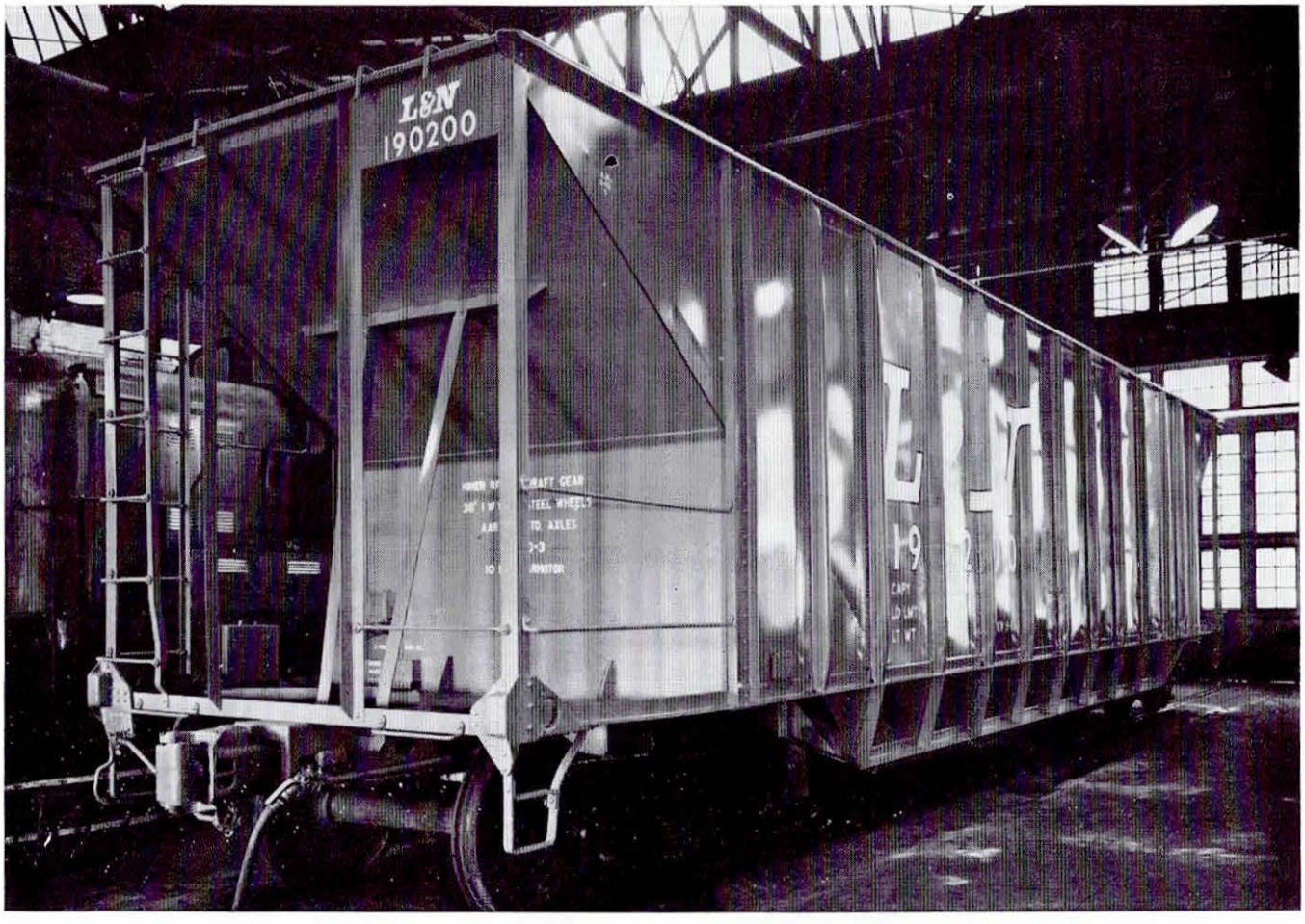
Jackson's field men, also experts in servicing, have first-hand knowledge of product performance through regularly scheduled equipment inspections. This insures minimum downtime for maintenance or repairs.

And, years of constant activity in the field have given Jackson's engineers the experience to build equipment with maximum reliability, from quality materials, to withstand the rugged nature of the job applications.

Write for detailed literature on Jackson's complete line of Job Verified equipment.

JACKSON VIBRATORS, INC. LUDINGTON, MICHIGAN

50 new all-steel 100-ton hoppers built with five special USS Steels



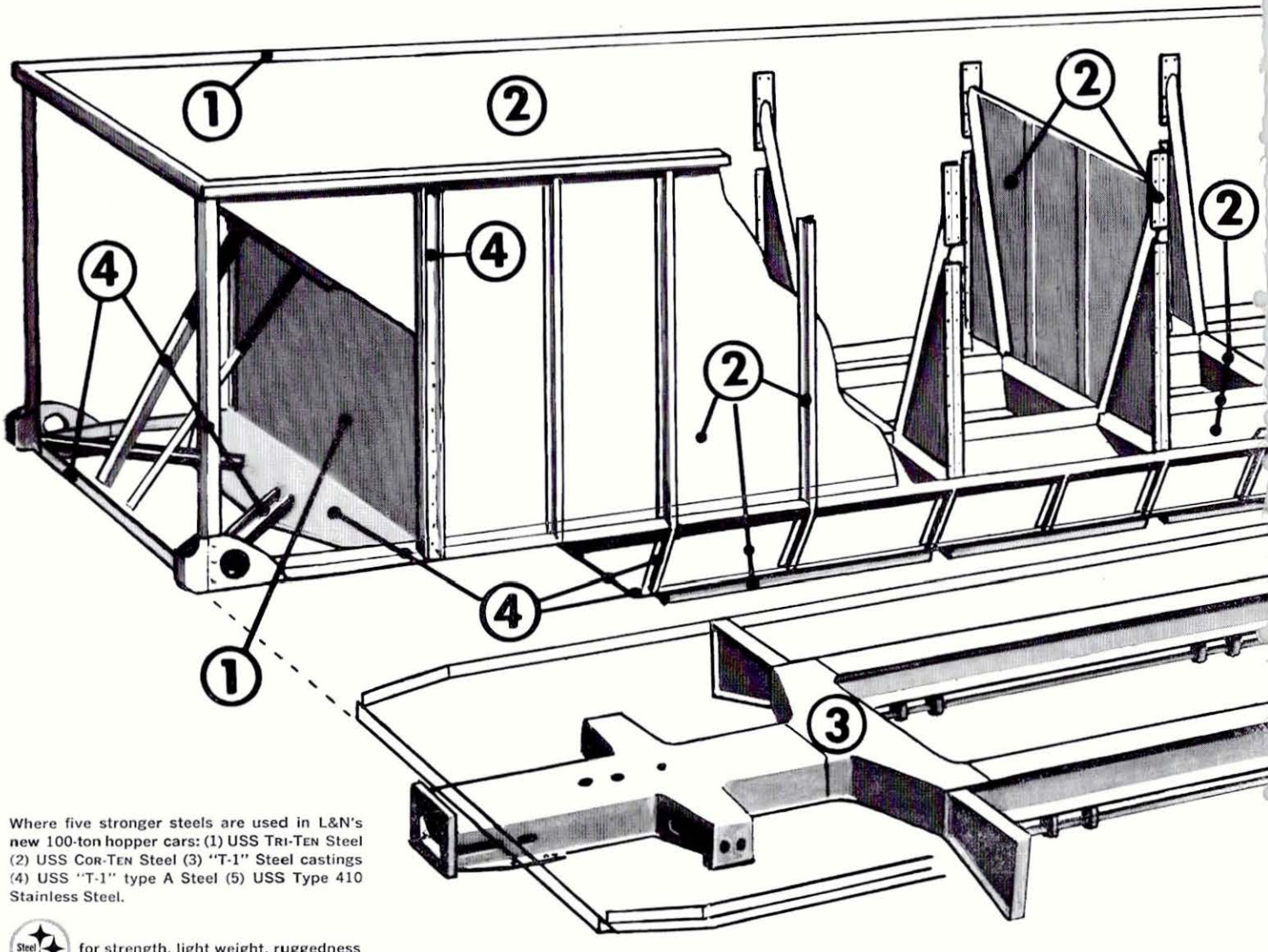
• weigh only 63,000 lbs. each • unload in 30 seconds—*turn page for story*

A family of five different specialty steels produced by United States Steel is being applied for the first time by the L&N Railroad to build a unique fleet of giant 100-ton coal-hauling hopper cars.

Fifty of these cars, each capable of unloading 100 tons of coal without mechanical assistance in less than 30 seconds, will comprise an integral train. It will shuttle between the West Kentucky coal fields and the TVA generating plants along the Tennessee River—a 450-mile round-trip in 24 hours. The train will replace two trains now doing the same job with 128 conventional 70-ton hopper cars.

The five special steels are USS "T-1" type A, USS COR-TEN and USS TRI-TEN High Strength, USS Stainless and "T-1" Steel castings. L&N's designers skillfully used these stronger steels to keep the car's light weight down to 63,000 pounds despite the increased capacity. They trimmed 8,400 pounds off the prototype car which had been built entirely of carbon steel.

Elimination of conventional center sill. By substituting two intermediate sills made of stronger USS "T-1" type A Steel 14-inch wide-flange beams, designers eliminated the center sill and provided room for longitudinal hoppers that dump coal only between the



Where five stronger steels are used in L&N's new 100-ton hopper cars: (1) USS TRI-TEN Steel (2) USS COR-TEN Steel (3) "T-1" Steel castings (4) USS "T-1" type A Steel (5) USS Type 410 Stainless Steel.

Steel for strength, light weight, ruggedness

tracks. USS "T-1" type A Steel has a minimum yield strength of 100,000 psi and the same elastic modulus as carbon steel—ample strength and stiffness for the job.

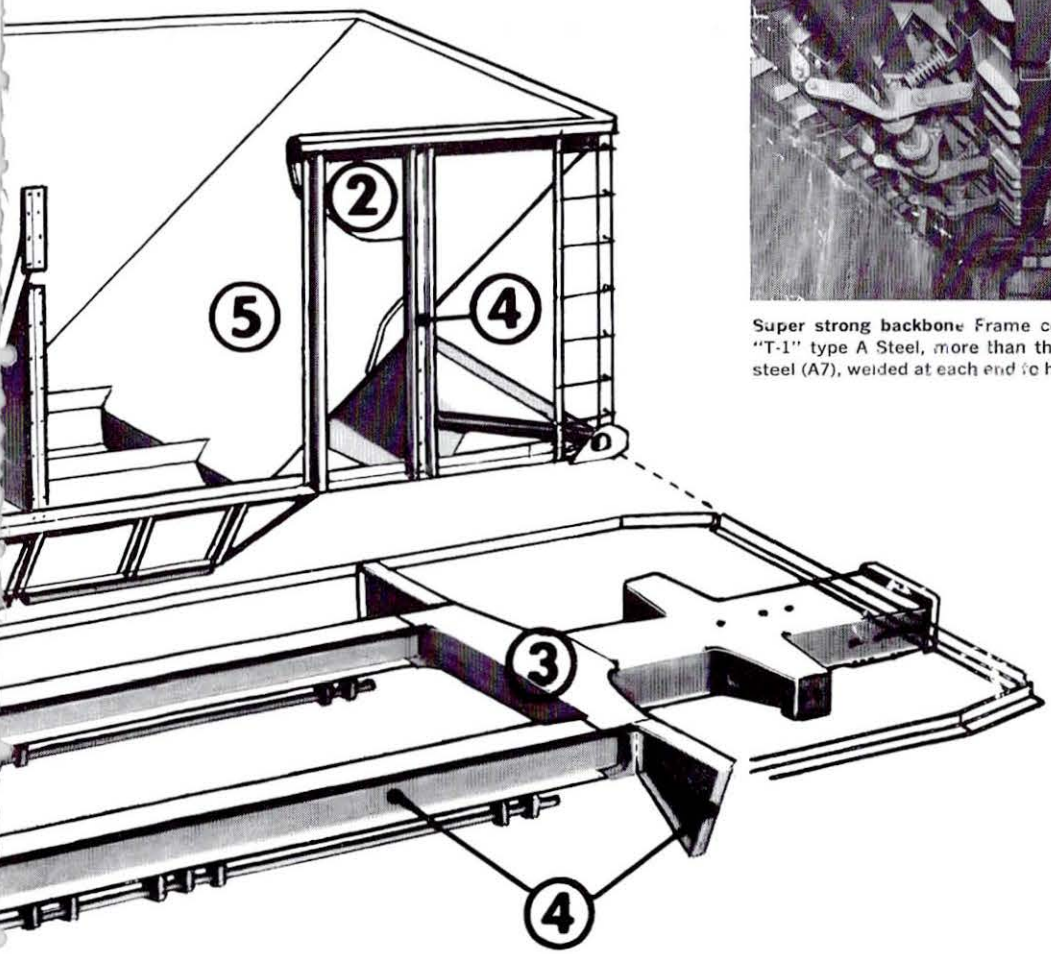
Quick unloading. Hopper slope plates of USS Type 410 Stainless Steel permit coal to slide faster and no mechanical shakers are needed. Hopper doors open in 6.4 seconds, dump the coal in 12 seconds and then close and lock in 7.4 seconds.

Built-in corrosion resistance. For most of the car's body, the L&N design team turned to a veteran freight car steel . . . USS COR-TEN High-Strength Low-Alloy Brand. For all parts exposed to the lading, except where especially good slideability was wanted, they used this steel from which more than 400,000 railroad cars have been built. Parts include side sheets, transverse bulkhead sheets, gussets, doors, and longitudinal hoods over the intermediate sills. They also specified COR-TEN steel for side posts with the exception of the bolster posts. These needed extra strength so they are fabricated from "T-1" type A Steel channels. USS TRI-TEN High-Strength Low-Alloy Steel was used for secondary structural members, for the bulb angle end plates and for the top chords.

Cast "T-1" Steel header. These headers are notable as the first application of cast "T-1" steel in the railroad industry and are furnished by Bonney-Floyd Company, Columbus, Ohio, a division of the Shenango Furnace Co., Pittsburgh, Pa.

For complete information on the USS Family of Steels for railroads, call our nearest sales office or write United States Steel, Room 7101, 525 William Penn Place, Pittsburgh, Pennsylvania 15230. Export Distributor: United States Steel International (New York), Inc., 100 Church St., New York, N. Y., U. S. A. 10008. USS, COR-TEN, TRI-TEN, and "T-1" are trademarks.

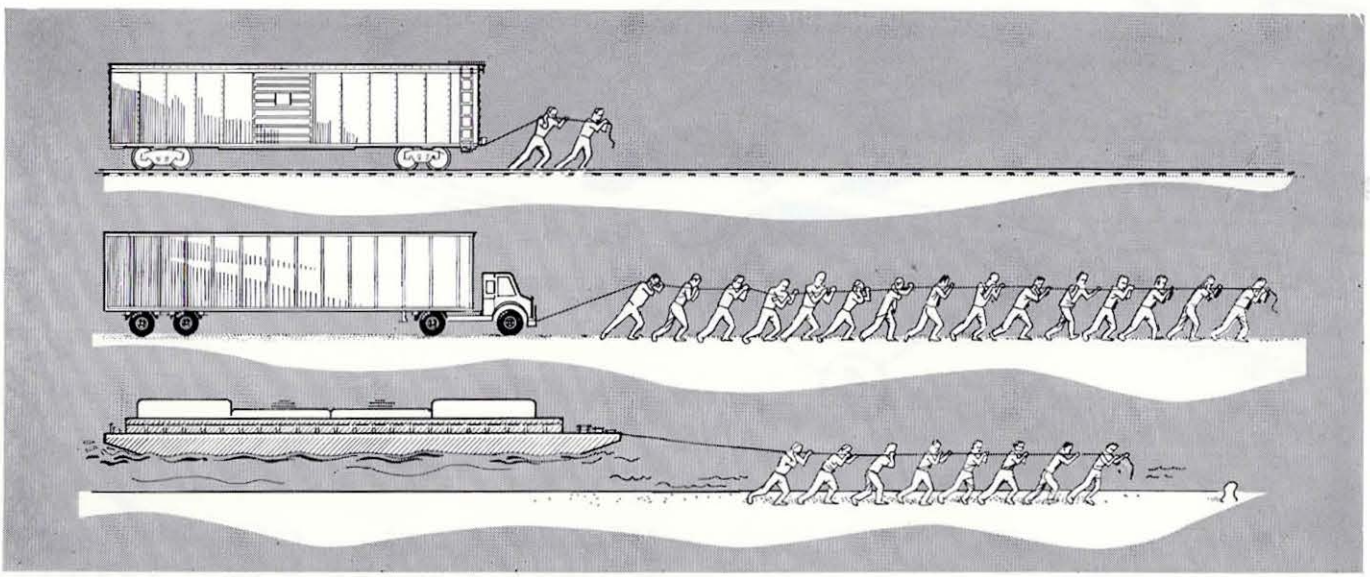
Super strong backbone Frame consists of two intermediate sills of USS "T-1" type A Steel, more than three times as strong as structural carbon steel (A7), welded at each end to header sill castings of "T-1" steel.



United States Steel USS

A RAILWAY AGE SPECIAL REPORT

Why railroads are most efficient form of



ncomparably the world's ransportation . . .

. . . 1. Rolling resistance of a steel wheel on a steel rail is fantastically low

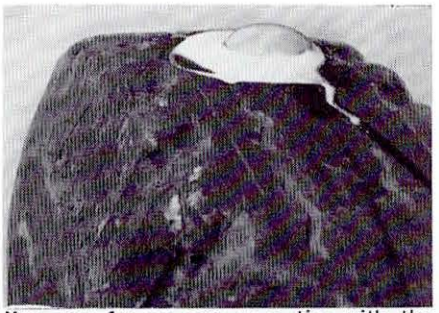
With railroads, efficiency starts from the ground up. The steel wheel rolls on the steel rail with far less resistance than a flexing rubber tire rolls on pavement, or a hull plows through water.

Why? Because the amount of friction that a train wheel must overcome is relatively small. The actual surface contact of a steel wheel with a steel rail is about the size of a dime.

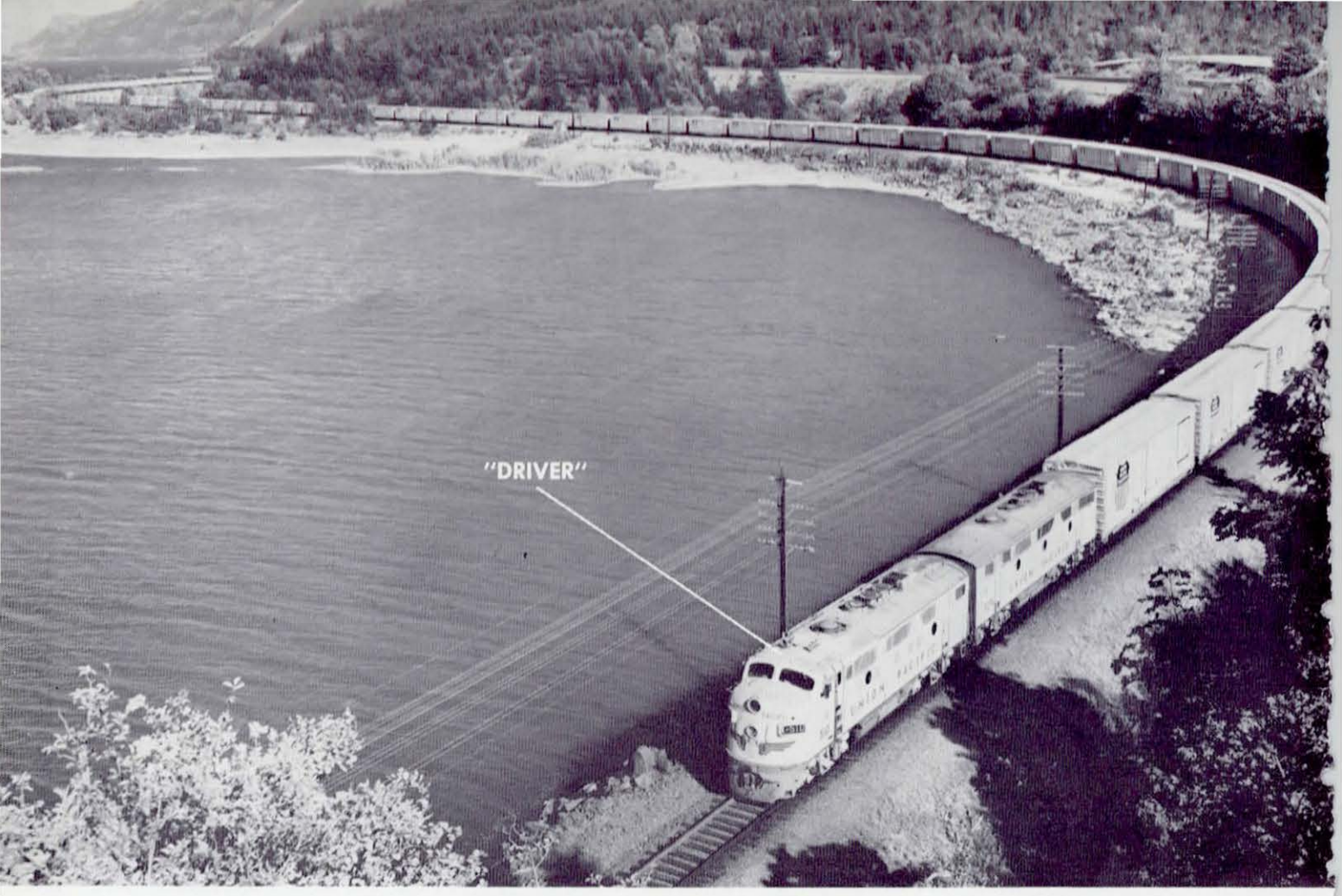
By contrast, the flexing of a rolling rubber tire as it flattens over a broad area of highway can sometimes build up enough internal friction and heat to fry an egg!

Friction can literally be a drag. Consequently, it takes 7½ times as much force to move a comparably-loaded rubber-tired truck on a highway as it does to move a steel-wheeled railroad car on a steel rail. And it takes four times as much force to move a hull in water.

This built-in engineering advantage of the wheel-on-rail is a prime contributor to railroad efficiency.



You can fry an egg on a tire with the heat sometimes built up by friction!


"DRIVER"

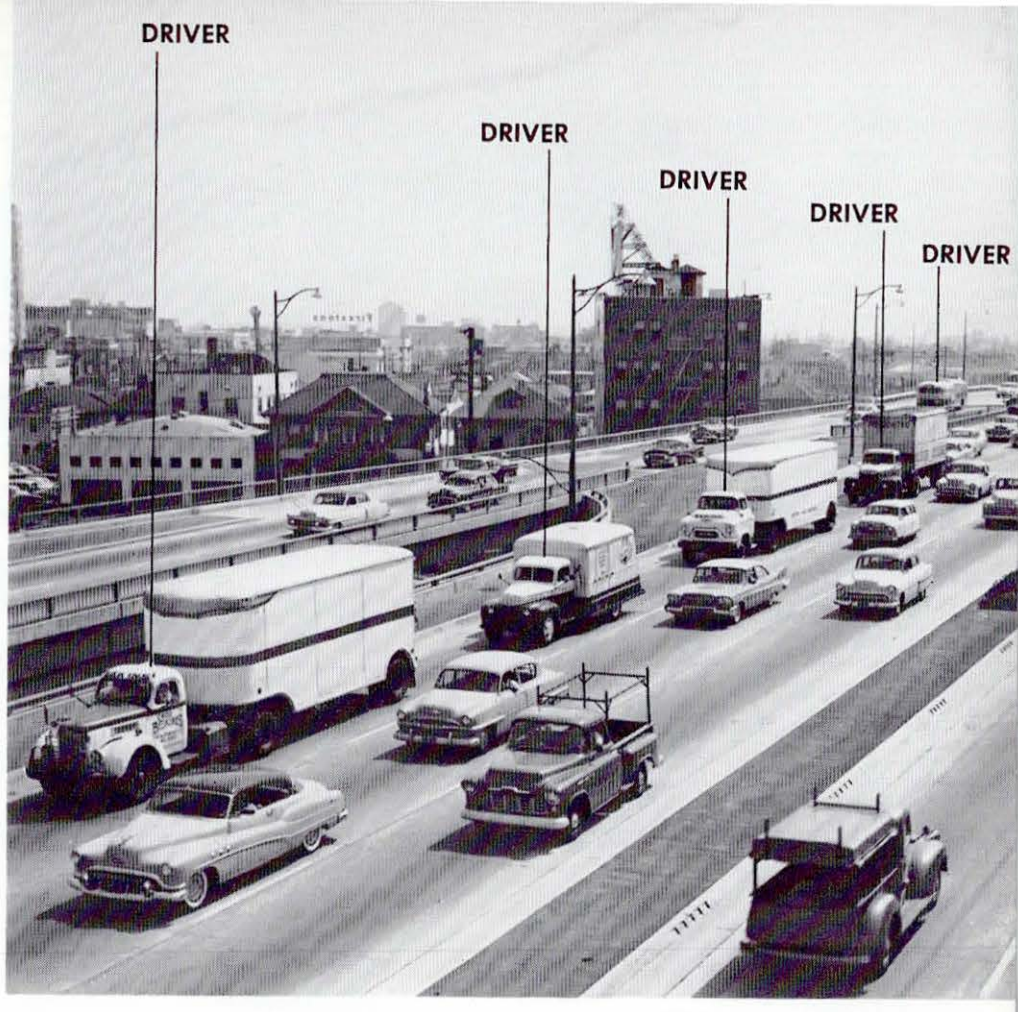
2. Manpower efficiency:

In no other form of transportation can so few employees accomplish so much.

Example: It takes 360 truck drivers and 360 trucks to handle the 4,300-ton load of *one* 100-car freight train, which has a crew of five.

By nature, a train needs very few men to run it. With its locomotive and cars coupled together it takes only one man to start it, stop it, run it.

Despite restrictive work-rules practices, railroads can still outproduce their transport counterparts. Case in point: To move 100,000 tons of freight between New York and San Francisco, it takes 43,416 man-days by highway, 11,158 by water. By rail: only 3,220!



3. Near-invulnerability to weather

Plowing through mountainous snow drifts in the far west, or barreling along on schedule through heavy fog on the Atlantic coast—when other forms of transport have been stalled—is how U.S. railroads have earned their high performance record.

Operating on their own rights of way, protected by all-weather "fail-safe" automatic signal controls, trains can usually get through even under the most adverse weather conditions.

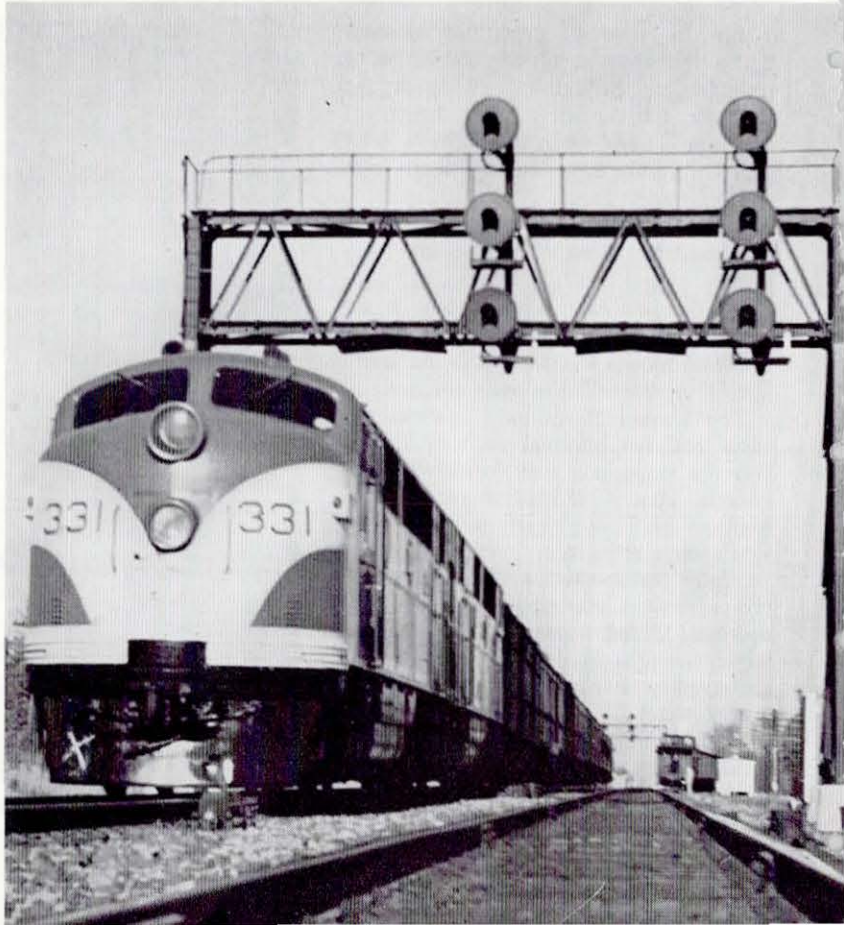
Other modes of transportation don't keep their travel lanes open themselves.

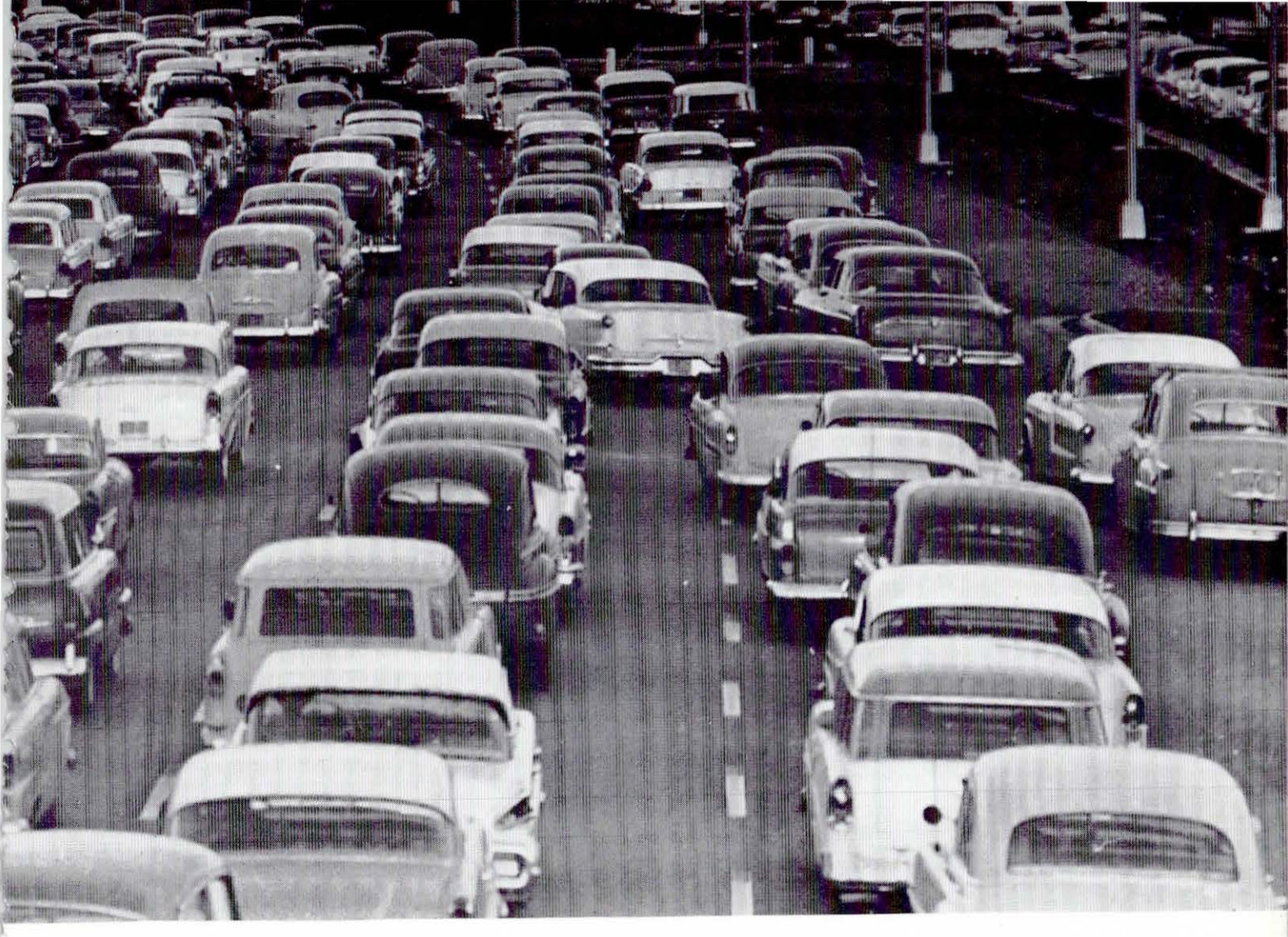
The United States pays millions for snow and ice removal each year, and still the stoppages and slow-downs are serious. Heavy rainstorms often bring highway traffic to nearly a stand still. Fog closes turnpikes.

Water transportation upon improved rivers is often interrupted by floods and drought. Inland waterway traffic during winter months in the northern part of the country is frozen in.

Through all this, trains maintain their rail-guided travel with near 100% reliability.

4. Compactness
—to save time
—to save space





The fate of America's choked traffic arteries is indissolubly linked to the fate of its railroads. Transportation efficiency thus becomes a must for the future.

The railroads have potentially won the space race. The race to save the precious space it takes to deliver the goods.

Example: Compare the freight traffic-carrying capacity of a super highway with that of a modern rail line. Check the payloads of each.

BY HIGHWAY—In 24 hours a four-lane, two-way expressway can carry 18,000 trucks. Carrying 12 tons of freight each, that's a daily total of 216,000 tons.[1]

BY RAIL—In 24 hours, a double-track rail line with centralized traffic control can carry 18,000 freight cars, each carrying 43 tons of cargo.[2] The day's rail total: 774,000 tons moved!

What does it boil down to? That two railroad tracks can carry more than three times the freight carried by a four-lane expressway.

And how about moving people? Just *one track* of railroad can carry enough trains in *one hour* to move 48,000 persons. One lane of expressway can move only 2,400 cars carrying about 12,000 persons in the same time.

The compact efficiency of railroads in saving precious time and space in the movement of people and goods can be a valuable contribution to the economic future of our urban areas.

The booming population concentrations within 168 metropolitan areas across the country—which are expected to contain some 80% of the nation's total population by 1985—multiply transportation problems daily. The nation's long over-due transportation bills are now coming up for accounting. And the price that may have to be paid for the years of over-emphasis on rubber-tired transportation to the neglect of our vital rail systems could be staggering.

To illustrate the value of some urban rail lines that have survived the rigors of the "automotive years," consider this:

If New York, Chicago, Philadelphia, Boston and Cleveland had to replace the 2,633 route miles of commuter railroads serving these five cities on a mile-for-mile basis with an eight-lane highway system of equivalent length and capacity, the cost would be more than $31 billion!

When it comes right down to it, the single railroad track that carries up to 48,000 persons per hour uses up a lot less space and money than the 20-lane expressway that would be needed to take over its job.

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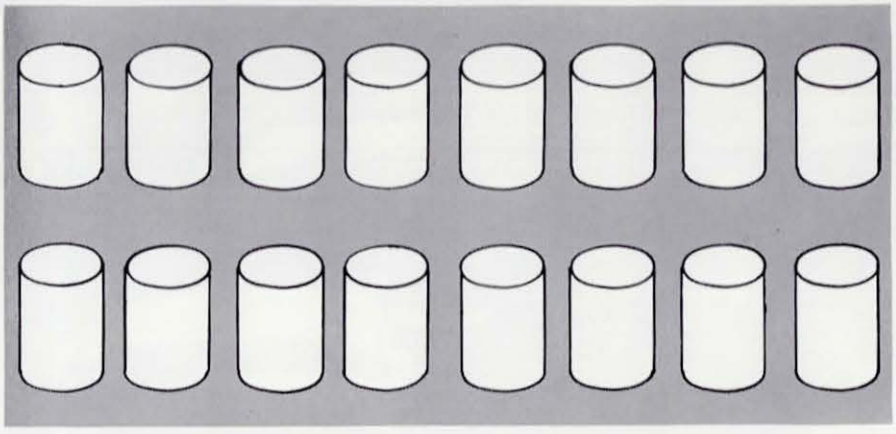
[1] Latest ICC figures on average load of motor common carriers.

[2] Association of American Railroads, average load of freight cars, 1963.

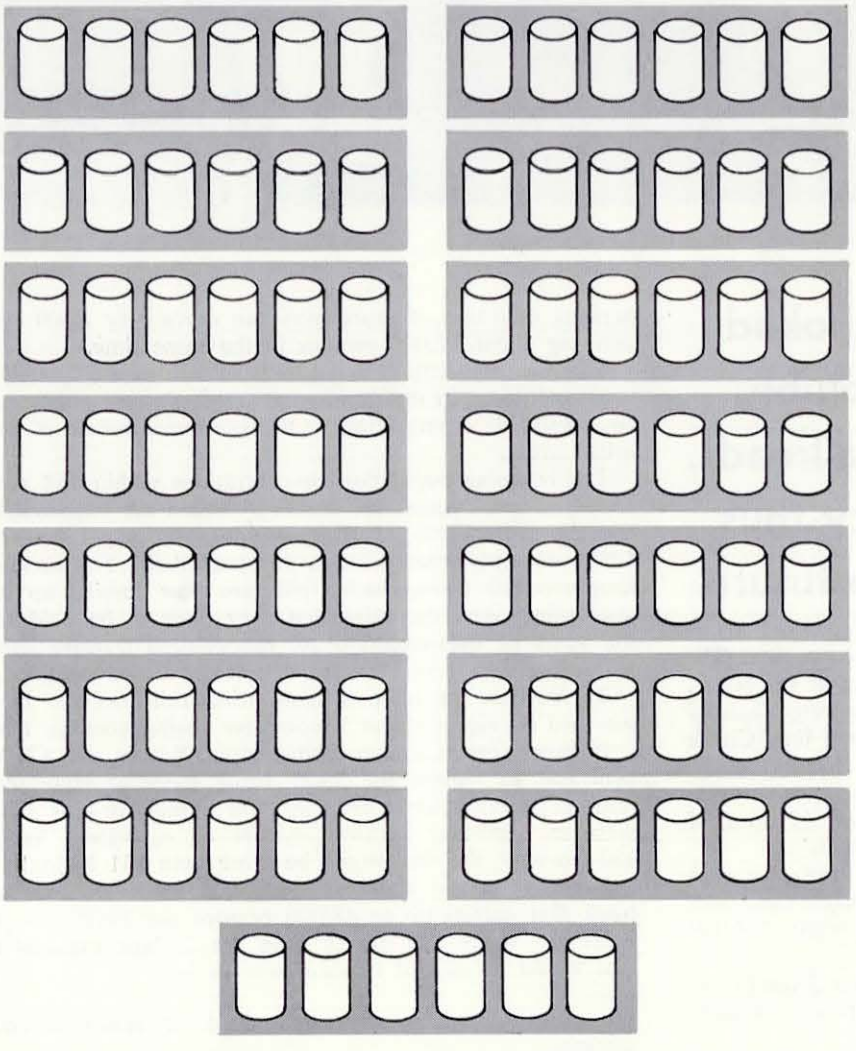
5. Fuel Economy

The average modern train produces 190 ton-miles of transportation for every gallon of fuel used. The average truck produces only 58 ton-miles for every gallon of fuel it uses.

Part of the reason for the train's tremendous superiority in fuel savings lies under the hood of the locomotive. There, one large diesel engine can generate, say, 2,750 horsepower far more efficiently than can the fifteen 180-horsepower truck engines needed to approximate the locomotive's load-pulling power. It's because friction enters in here. The diesel locomotive needs only a fraction of the cylinder wall surface that the fifteen truck engines require to do the job.



Displacement of a 2,750-horsepower railroad locomotive diesel engine.



The fifteen 180-horsepower truck diesel engines needed to come close to the power of the locomotive engine have considerably more total cylinder wall area.

To illustrate: Two pint jars look surprisingly large when seen next to a quart jar. This demonstrates a basic fact of solid geometry—that a larger jar is much more efficient than a smaller jar because it requires less wall area to contain each cubic inch of volume.

It is this efficiency of a larger container that gives a giant diesel engine in a railroad locomotive an important advantage over the many smaller highway truck diesel engines that are needed to equal its total horsepower.

Other things being equal, the power of an engine depends basically on the size of the area in which combustion and expansion of the fuel mixture take place.

In a 2,750 horsepower (at 1,050 rpm) diesel railroad engine, this takes place in 16 cylinders of 9-inch bore and 10½-inch stroke. The total cylinder wall area here is 4,479 square inches.

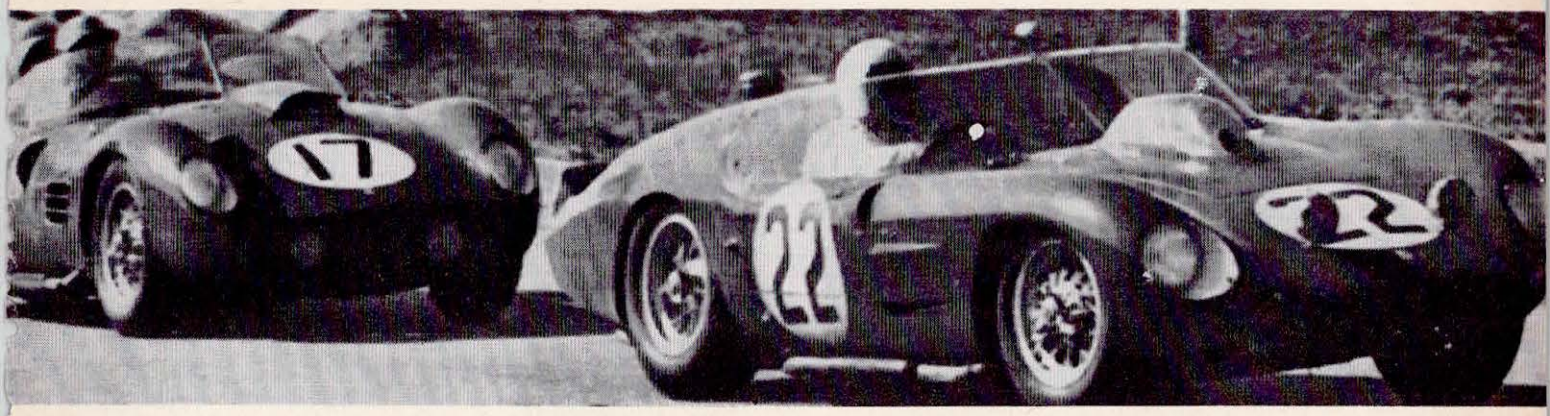
In a typical 180-horsepower (at 2,100 rpm) truck diesel engine, this takes place in 6 cylinders of 4.875 bore and 6-inch stroke. The total cylinder wall area here—for the 15 engines needed to equal the train diesel—is 8,269 square inches. This is up towards *twice* that of the railroad diesel. (And this does not take account of the fact that the truck diesel must turn twice to the locomotive's once to achieve its rated horsepower!)

To realize how important this difference is, it should be remembered that a main objective of modern power plant design has been to minimize the area of frictional contact between tightly-fitted pistons and cylinders. For despite super-smooth surfaces and super-slick lubricants, the friction between pistons and cylinders is still considerable. One automobile manufacturer has calculated that, at 30 mph, more power is required to overcome friction within the engine than reaches the rear wheels to drive the car.

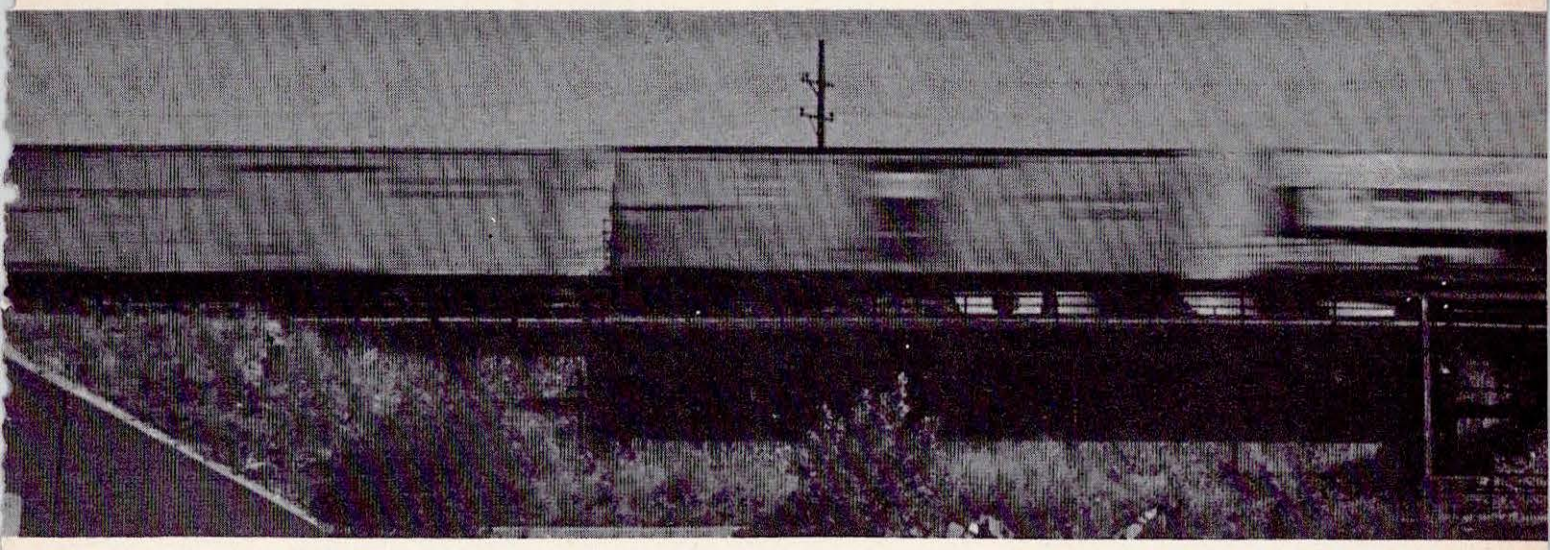
Thus, today's "square" and "oversquare" engines were developed to reduce the piston-to-cylinder wall area of contact. And the chief merit of the gas turbine—despite other difficulties—is that it eliminates piston and cylinder wall contact altogether.

"Large container efficiency" thus gives the giant railroad locomotive diesel an important economy advantage.

Riding the wind. Trains, by virtue of



Much like 'drafting' racing cars . . .



. . . freight cars running in tandem enjoy lowered air resistance.

their makeup, benefit from another advantage. This one involves air resistance.

Air resistance, being greater at high speeds, is more important to passenger vehicles. But trucks and buses, running 50 to 60 mph or better, are likely to find propulsive resistance, and especially air resistance, of marked significance.

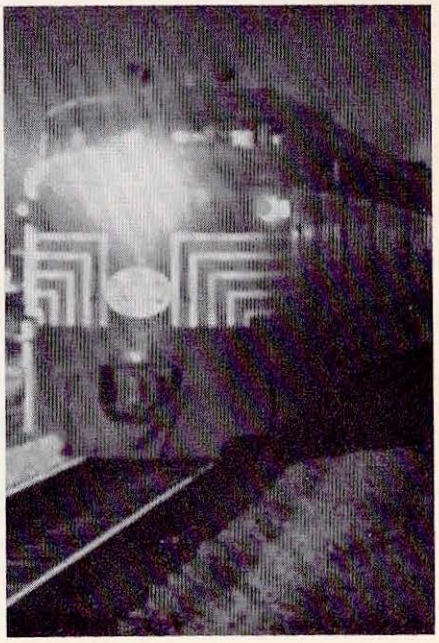
Trains get their share of air resistance, too. But trains, by their nature, benefit from the tailgating effect of "drafting."

"Drafting," in automobile racing parlance, is when a driver tries to use the semi-vacuum created by a car ahead of him to nullify the resistance of the air on the front of his own car. The second car helps the one ahead, too, by breaking the semi-vacuum it would have to drag.

In a fast train, each car in effect "tailgates" or "drafts" on the one ahead of it—with far less air resistance than if each car proceeded separately, as does the truck on the highway.[1]

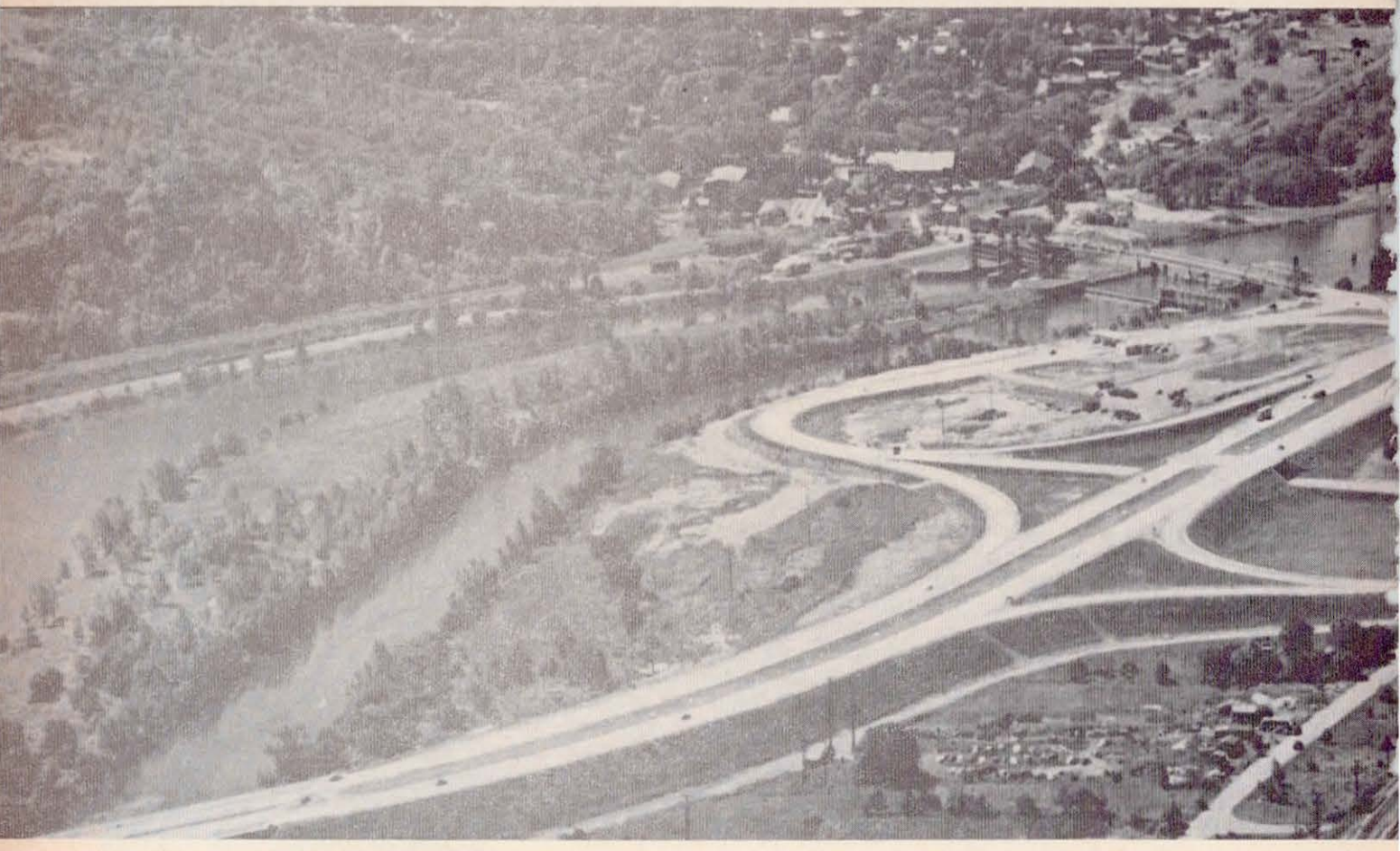
In the case of fast trains, the air resistance of the complete train is considerably less than the sum of the air resistance of the single cars used separately. The concentration of the propulsive power in the locomotive allows the employment of large power plant units, with better efficiency and lower specific weight.

In a time of rapidly increasing transportation speeds, it is worth remembering that the railroad's cars-in-tandem air resistance advantage is bound to become more important.

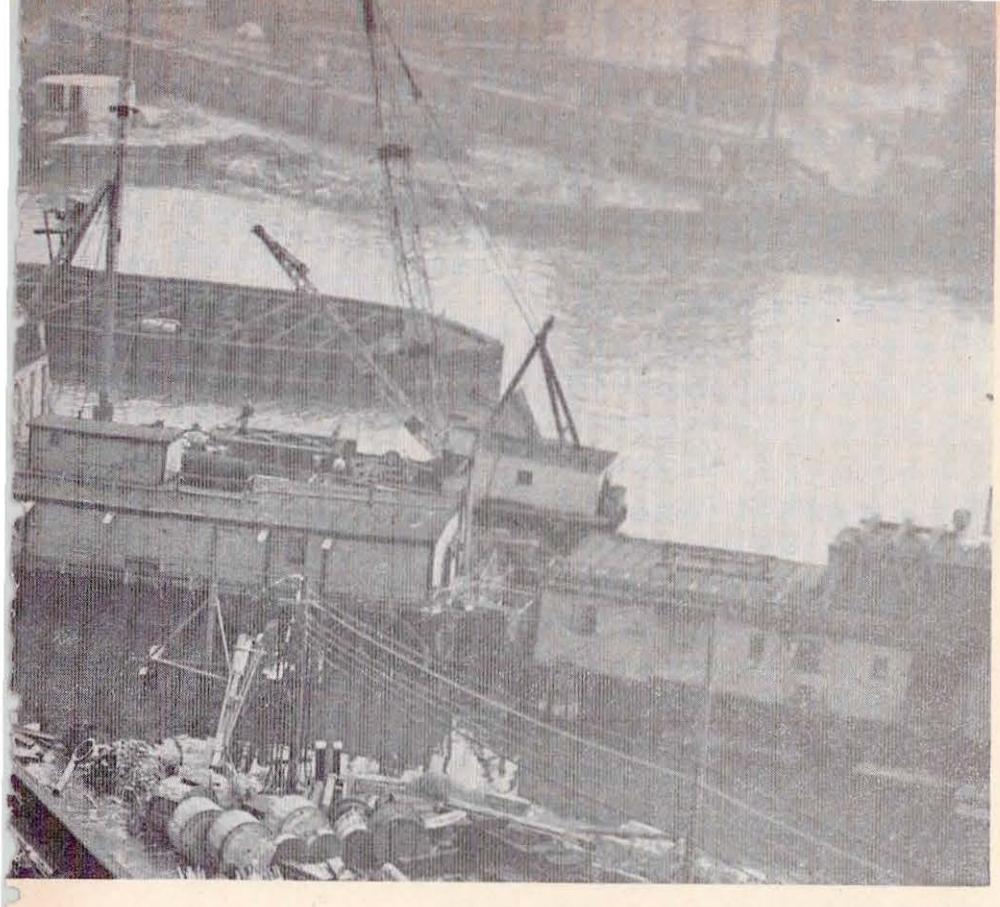


[1] A recognized formula for train resistance shows the drag coefficient of air: (0.0017 for streamlined locomotives and single or head-end-rail cars, 0.0025 for other locomotives, 0.0005 for freight cars, and 0.00034 for trailing passenger cars.

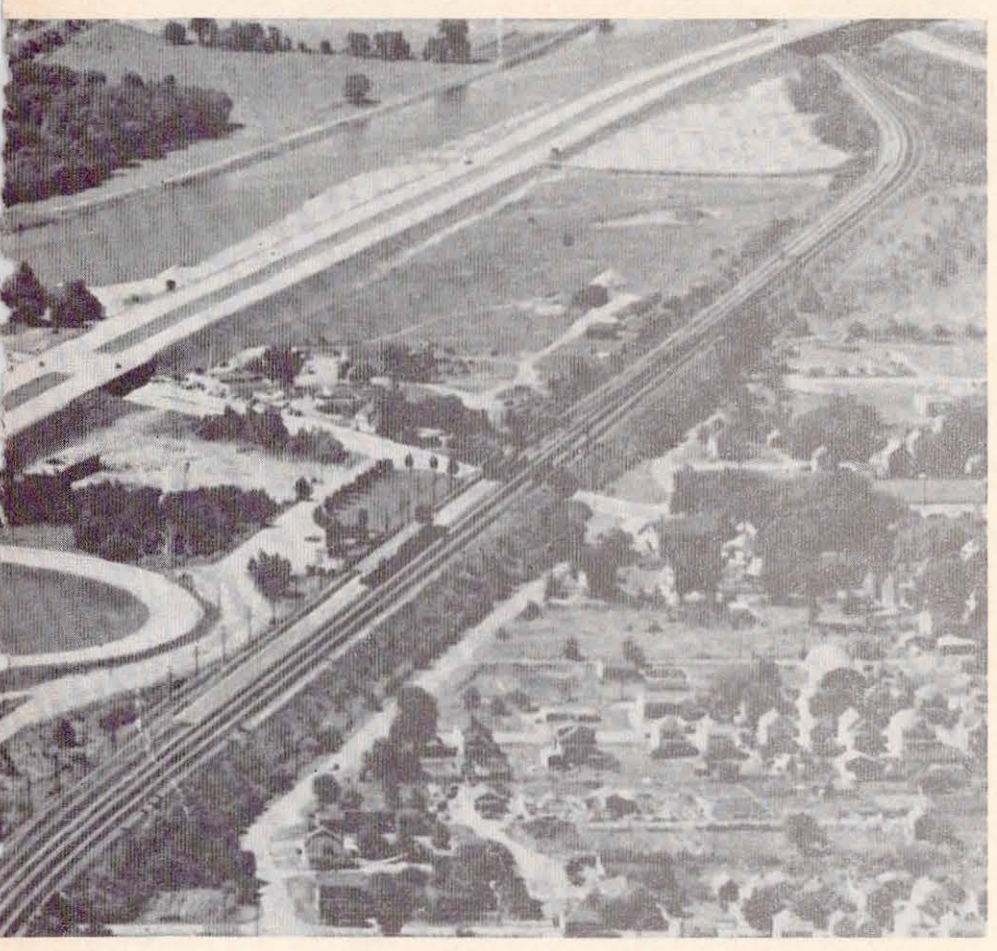
Only superb efficiency enables the railroads to lay their



...and at the same time join other taxpayers and contribute heavily



own track, maintain it, build their own bridges



to the building of roads, airports, canals.

'Milking' the railroads to the benefit of other forms of transportation is a gross misuse of their great ability to contribute to America's growth.

Put together the low rolling resistance and the superb giant diesel engine efficiency of a train, and you see how the mechanical efficiency of a railroad surpasses that of other forms of transportation.

Add efficiency in use of manpower and road space, and near-invulnerability to weather conditions, and you can see why there is a railroad boom throughout the world.

But here in the United States, railroads are still treated like poor second cousins. Waterways, airways and highways are financed and built by the government. They are maintained by the government. Interest costs on capital investment for waterways, airways and highways are paid by the government. Waterways, airways and highways are tax-free. They bring in no tax revenue to support the federal, state and local governments that build and maintain them.

Railroads are the only mass producers of transportation that are nationwide in extent and which can economically, dependably, and continuously haul all types and quantities of traffic between any combination of points.

In transportation, technical efficiency is measured by the comparative amounts produced in relation to fuel and labor used. Here, the railroads rate high. But further development and exploitation of their built-in productive capacity and its integration with service requirements will provide the public with even better service at a still lower cost.

The fact is that railroads are incomparably our most efficient form of transportation. But they do their job under the great handicaps of over-taxation and over-regulation. The only thing wrong with them is that we don't give them an even break in their competition with other forms of transportation.

Q. If trains are so much more efficient technologically, why are trucks, barges and planes able to do so well?

A. One reason is that they have a Rich Uncle to pay a lot of their bills.

Each mode of transportation has its own area of greatest economic effectiveness. With the railroads, that area is the movement of quantities of goods and people over medium and long distances. Trucks are economical for smaller quantities and shorter distances. Planes are a natural choice for hauls where speed is more important than low cost.

Barge transportation might, conceivably, be quite economical for the leisurely movement of low-value and bulky commodities in some places—even if users paid the costs of the waterways, as at present they do not.

Our country will achieve maximum economy in transportation (most service at minimum consumption of fuel, of man-hours, and equipment) if transportation jobs are divided among the different modes in relation to their comparative economy. That is, we would not use 100 trucks and their drivers to do the work of one freight train—nor would we use a locomotive and a crew of five men to move a single freight car.

Traffic is attracted to each transportation mode, however, not by its relative economy, but its relative expense to the shipper. If all the costs of railroad service have to be paid by railroad patrons (as they actually are)—while a large part of the costs of using highways, planes or inland water routes is paid by the taxpayers—then railroad service is made to appear relatively more costly than it actually is. This means that a great deal of traffic that could move most economically by rail is actually diverted arbitrarily to other modes.

So, if America wants its transportation work done at minimum cost, then it must calculate the cost of each mode of transportation in exactly the same manner. If one mode is taxed, all must be taxed on the same basis. If one mode has to pay the full cost of its roadway and terminals, then all the others must be self-supporting to an equivalent degree.

Likewise with regulation. If one form of transportation is regulated, then all others must be regulated in exactly equal degree—or all must be equally freed of regulation.

It is merely a question of thrifty management of our natural resources—getting the most transportation service for each dollar paid out for the purpose.

One of our leading authorities on transportation economics has said:

"There is no great room for doubt that, were all traffic distributed in accordance with the true comparative advantage of the several forms of transport, the annual transport bill would be reduced by several billions of dollars on freight alone."

Well, how about it? Should we keep on wasting these billions of dollars each year—or should we get our money's worth in transportation, by putting all modes on a basis of equality in regulation, taxation and self-support?

This nation's invincible defense in two World Wars has been its superior efficiency in production and transportation. We cannot waste our way to victory in a third global conflict.

Throughout the world, most strong nations are concentrating their attention on improving the productivity of their industry and transportation. In this international competition the victors, as always, will be those who are wisest in the choice of these tools.

Smart nations do not do wholesale jobs with retail instruments. They use bulldozers and not hand-shovels on major exacavations. They graduate from wheelbarrows and mule-powered wagons to trucks, and from trucks to train-loads—always seeking the maximum in useful results from the minimum expenditure of man-hours and materials.

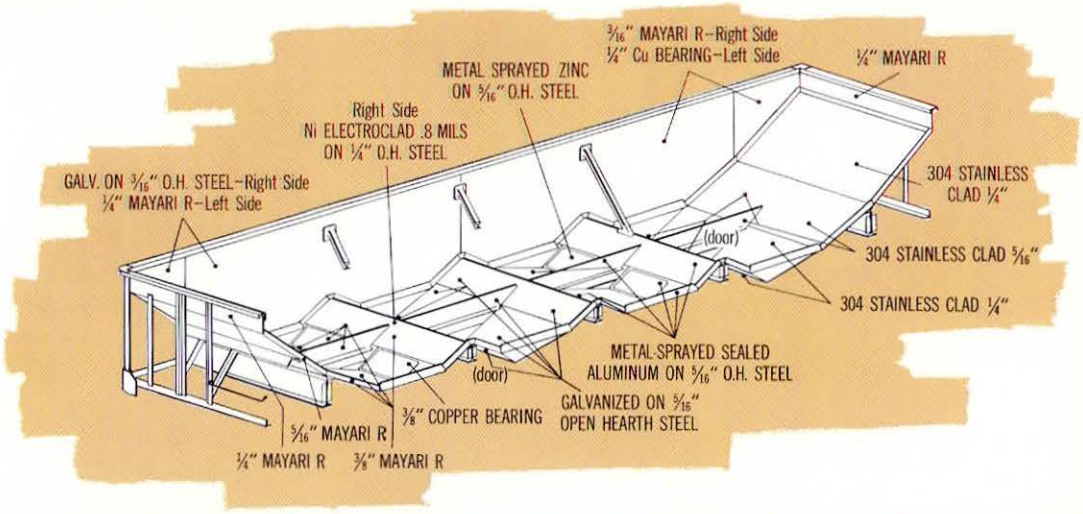
Almost alone among the great nations, the U.S.A. leaves the choices in transportation development to politics, rather than to technology and economics.

The path of economic freedom—letting the customers decide their preferences—is clearly the way to maximum efficiency. But customers can decide wisely only if alternate methods have their costs and prices calculated according to the same basic rules.

It is relative prices, not abstract economics, that govern the customers.

The present railway plant has the capacity to handle a vast increase in traffic—with only modest increases in expenditures.

No other form of transportation offers this economic opportunity. The railways seek only that degree of equality of treatment by regulators and tax collectors which will enable them to save America several billion dollars in its annual transportation bill. The road to greater national wealth and military strength is still the railroad—as it has been for more than a century.



Bethlehem Research Car uses 7 kinds of steel to develop corrosion data

Seven different kinds of steels and finishes, in four different thicknesses, make up the special research hopper car which we call the X-103. Included are copper-bearing carbon steel, Mayari R low-alloy, high-strength steel, zinc- and aluminum-coated steels, and stainless steels. Each is assigned specific and corresponding locations in the car.

The X-103 has been in regular service for some months between a West Virginia coal mine and our Sparrows Point, Md., steel plant. Its purpose is to give Bethlehem research engineers a rolling laboratory for the study of corrosion and abrasion problems. This is just another example of how Bethlehem is serving the railroads, not only by building freight cars, but by seeking to build better freight cars.

Steel for Strength

BETHLEHEM STEEL

BETHLEHEM STEEL

500 special 100-ton hoppers for general service on the Southern Pacific

These 100-ton giants are of welded and riveted construction, designed for loadings of crushed rock, gravel, sand, crushed limestone, ores and other heavy mineral products that are shipped in bulk quantities. They measure 32 ft 8 in. over end top chords, have an inside width of 9 ft 8½ in., and stand 12 feet from rail to top of side chord.

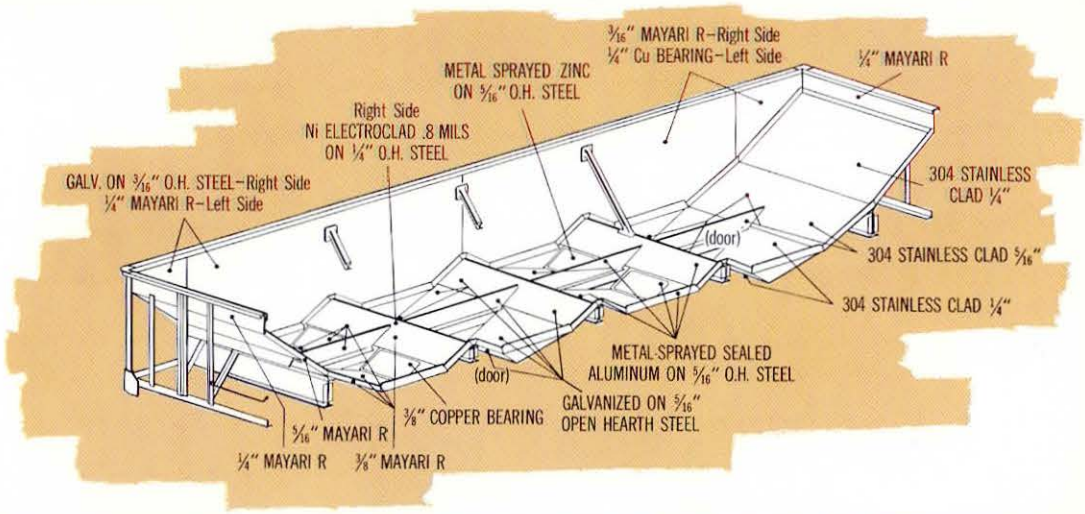
With a light weight of 58,780 lb, these hopper cars ride on roller bearings. They have a cubic capacity of 2100 cu ft, level full. They are expected to give many years of trouble-free service. Need selective type hopper cars?

225 flat cars 89 ft long for rack service on the Wabash

Last Fall, Bethlehem delivered 225 of these 89-footers to be equipped with racks for automobile transport on the Wabash. Bi-level racks were installed on 121 of the cars, tri-level racks on the other 104. Each tri-level car can carry 15 of the new, larger compact automobiles.

Of standard deck height, these flat cars are equipped with hydraulic draft gear. Bethlehem's progressive engineering and unsurpassed quality control are embodied in the cars . . . something to bear in mind next time you need flat cars.

BETHLEHEM STEEL



Bethlehem Research Car uses 7 kinds of steel to develop corrosion data

Seven different kinds of steels and finishes, in four different thicknesses, make up the special research hopper car which we call the X-103. Included are copper-bearing carbon steel, Mayari R low-alloy, high-strength steel, zinc- and aluminum-coated steels, and stainless steels. Each is assigned specific and corresponding locations in the car.

The X-103 has been in regular service for some months between a West Virginia coal mine and our Sparrows Point, Md., steel plant. Its purpose is to give Bethlehem research engineers a rolling laboratory for the study of corrosion and abrasion problems. This is just another example of how Bethlehem is serving the railroads, not only by building freight cars, but by seeking to build better freight cars.

Steel for Strength

BETHLEHEM STEEL

BETHLEHEM STEEL

500 special 100-ton hoppers for general service on the Southern Pacific

These 100-ton giants are of welded and riveted construction, designed for loadings of crushed rock, gravel, sand, crushed limestone, ores and other heavy mineral products that are shipped in bulk quantities. They measure 32 ft 8 in. over end top chords, have an inside width of 9 ft 8½ in., and stand 12 feet from rail to top of side chord.

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BETHLEHEM STEEL

200 quadruple hopper cars for fast coal movement on the Burlington

Here are a few of the 100-ton quadruple hopper cars which Bethlehem recently delivered to the Burlington for the swift haulage of coal. They measure 49 ft over strikers, and incorporate many of the features of the AAR Alternate Standard car which Bethlehem helped to develop. The cars combine the best features of both riveted and welded construction.

700 Reading hopper cars rebodied and re-stenciled for B&O

This car is typical of the 700 twin-hopper Reading cars which Bethlehem is "remodeling" from 50-ton to 67-ton hoppers for service on the Baltimore & Ohio. The rebodied cars are 34 ft long over strikers, have an inside width of 10 ft 4 in., and stand 11 ft above the rails. Level-full capacity is 2259 cu ft.

Bethlehem is well equipped to rebuild your old freight cars. Let's talk over your rebodying needs.

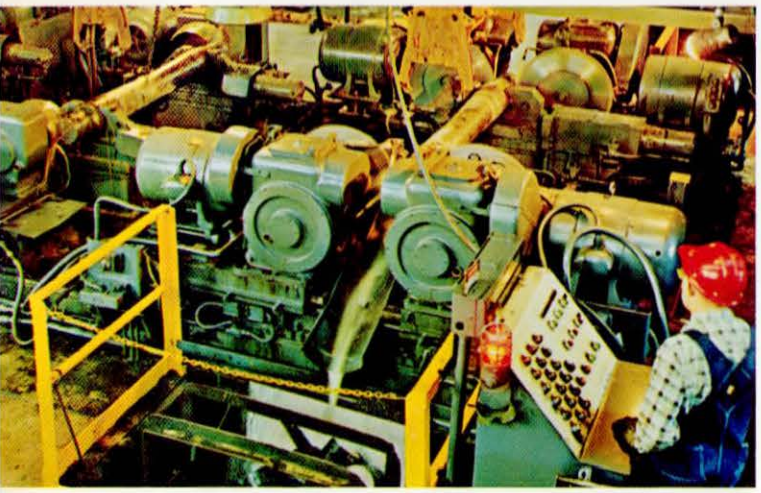
BETHLEHEM STEEL

BRING YOUR FREIGHT CAR REQUIREMENTS TO BETHLEHEM

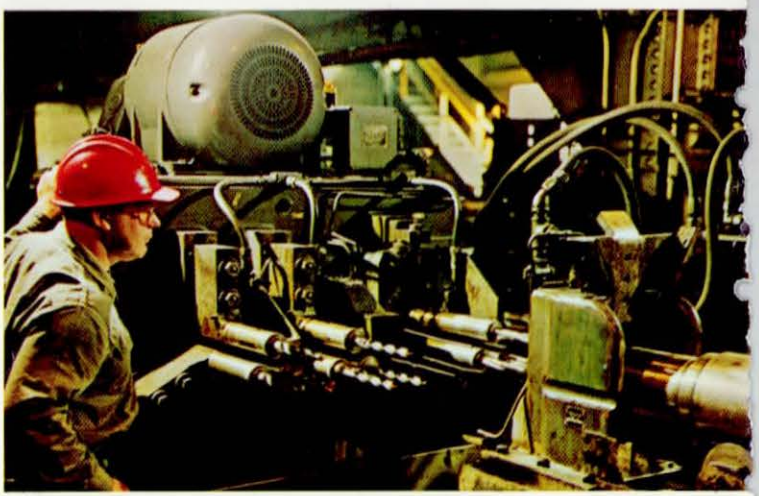
Watch how we machine these blue-ribbon roller-bearing axles

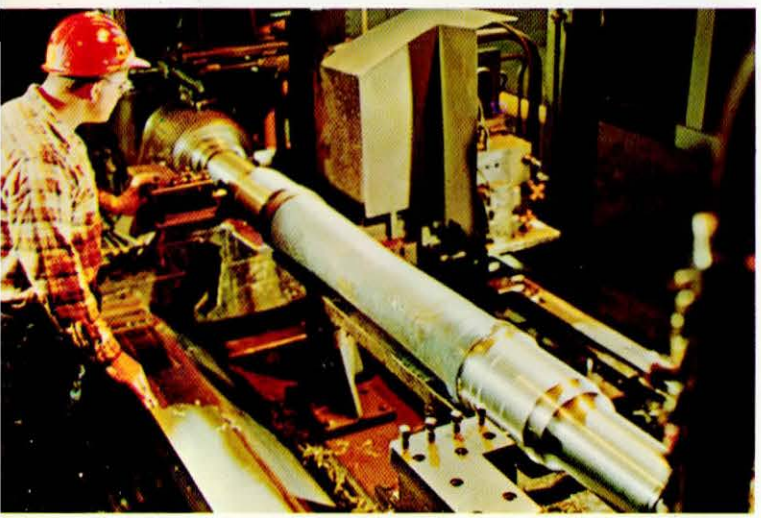
We wish you could actually visit our axle plant, for we believe Bethlehem's facilities for manufacturing roller-bearing axles are the most modern in the country. We can produce the two most common roller-bearing axles in freight service: AAR Standard and AAR Alternate Standard. We also make solid-bearing freight-car axles, and roller-bearing axles for passenger cars and diesel locomotives. What kind of axles do you need?

1. After the axle has been forged and straightened (and heat-treated, if desired), it enters the first machining operation. On this four-station, index-type automatic machine, we saw axles to length, mill the end faces, drill the centers.



2. Here, we drill and tap the roller-bearing end-cap holes in a four-station machine. The stations are 1) spot-drilling, 2) finish-drilling, 3) washout of holes, 4) tapping. Each operation is performed simultaneously on both ends.





3. On tracer-control dual-end drive lathes, we semi-finish-turn the journals and dust guards prior to grinding, and finish-machine the wheel seats.

4. Finish grinding is performed on contour grinders, to dimensions as established by the AAR. Each grinder is equipped with a wide wheel into which the exact contours of the axle journal and dust-guard seat have been dressed.

Steel for Strength

BETHLEHEM STEEL COMPANY Bethlehem, Pa. EXPORT SALES: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

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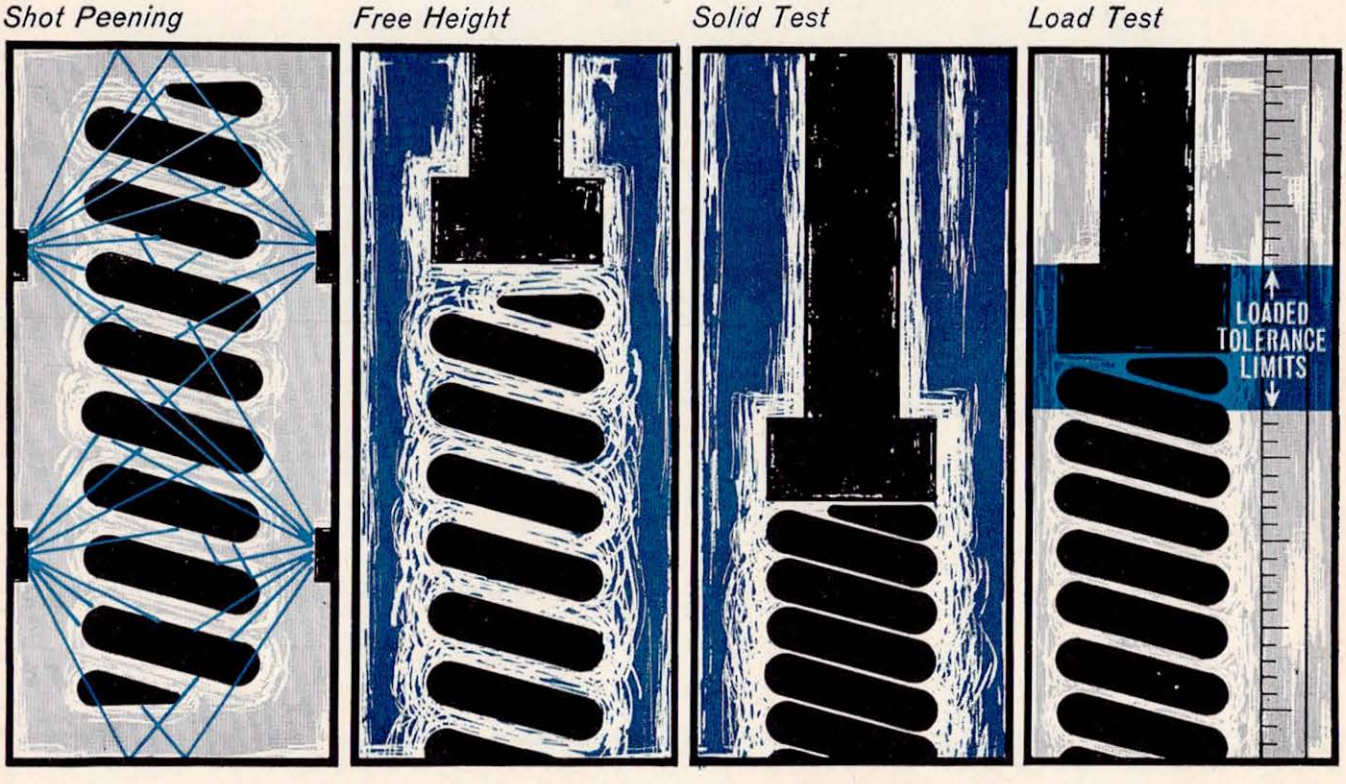
Certifies That Each Truck Spring Meets AAR Specs

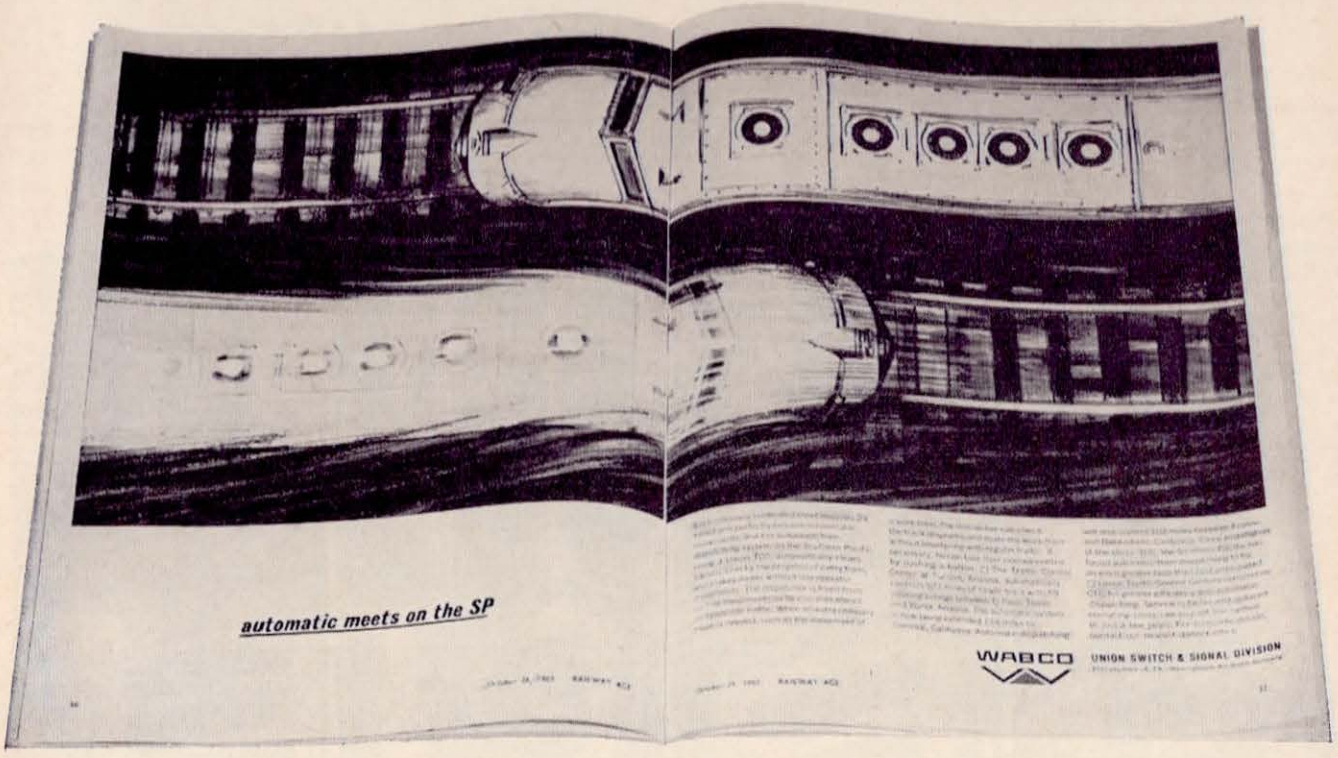


Every Crucible TRULOAD* truck spring meets the narrow AAR loaded height specifications. This is possible because 100% Electronic Load Testing is standard procedure—an integral part of the Crucible production line. After the SHOT PEENING operation, every spring automatically passes through the solid test stages followed by the final electronic load test. Here any spring is automatically rejected when it is outside the tolerances and fails to meet AAR specs . . . hence 100% testing means 100% security for you. ■ Crucible's quality TRULOAD truck springs are the composite result of quality steel — rigid inspection — constant testing — and automatically controlled production. Crucible, the only steel maker producing springs, has quality control from ore to finished spring — and ultramodern, custom load testing equipment. ■ Depend on Crucible TRULOAD springs for quality — safety through greater strength — longer service life — less maintenance cost per ton-mile.

*Trade Mark

CRUCIBLE® STEEL COMPANY OF AMERICA
Spring Division • 1 McCandless Ave., Pittsburgh, Pa. 15201

Why advertise to railroad shop supervisors if you're selling traffic control systems?



Advertising for WABCO'S US&S DIVISION by BBDO, Pittsburgh

WABCO's UNION SWITCH & SIGNAL DIVISION doesn't

There are two groups of railroad men who are the active buying influences for traffic control systems.

One is the *management group*. The other is the *signaling group*. But master mechanics, bridge inspectors and a host of other railroad men, important in their own fields, couldn't care less.

So WABCO's Union Switch & Signal Division chooses the live prospects with a custom-tailored buy in the Railway Age Group. For the management group, Railway Age. And for the signal men, Railway Signaling and Communications—one of the four specialized railway monthlies.

Thus you eliminate much costly waste circulation. You pay *only* for the audience you want to reach.

Added advantage: *Standout readership*—in books where both the editorial content and the ads are beamed directly at the special interests of particular groups.

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In the Railway Age Group, advertising is read with exceptional interest. Readership of Railway Age weekly, with its alert, up-to-the-minute reporting, is among the most thorough of *any* of the 19 business publications studied by Mills Shepard, Inc. One reason, of course, is that every copy reaching railroad men is a paid subscription copy.

And the four specialized monthlies of the Railway Age Group consistently are voted "most useful" in their fields, by margins as high as 6 to 1 over the competing general railway monthly.

No wonder the US&S Division of WABCO placed 65 pages of advertising in the Railway Age Group during 1963. No wonder more than 70% of *all* advertising in the railroad business magazines appears in the Railway Age Group! Ask your Railway Age man for the full story. Simmons-Boardman Publishing Corporation, 30 Church Street, New York, N. Y. 10007 WO 4-3060.

THE RAILWAY AGE GROUP

Railway Age • Railway Track and Structures • Railway Locomotives and Cars • Railway Purchases and Stores • Railway Signaling and Communications • International Railway Journal

IC strike: showdown

(*Continued from page 11*)

By 10 a.m., even as a quartet of top union vice presidents were holding a press conference and telling newsmen that "management must bear the responsibility for any inconvenience to shippers and travelers," IC's president made an announcement that, in effect, threw the gauntlet down to the unions: "Instead of taking the injunction route in meeting this emergency, the IC is joining the other railroads of the United States in placing into effect the new work rules at 12:01 a.m. Friday. This is a national, not a local issue," said IC's president grimly.

Union chieftains—there is some evidence IC's decision caught them off balance—had little time to assess IC's determination.

● **Washington moves.** Labor Secretary Wirtz, after consulting with President Johnson during the early hours of the crisis, acted swiftly to assemble the disputants. By noon calls were out to the union chiefs, to the railroad chief executives who are the administrative committee of the NRLC, and to J. E. Wolfe for an 8 p.m. meeting in Washington where, observers believed, LBJ would keep a close check on the deteriorating situation.

By 3:30 in the afternoon, IC's Johnston, C&NW's Chairman Ben W. Heineman and Santa Fe's President E. S. Marsh were in the air headed toward the showdown in the nation's capital. They were joined by PRR Chairman Stuart Saunders, Erie Lackawanna Chairman William White, and presidents A. E. Perlman, of the New York Central, W. T. Rice of Atlantic Coast Line and Walter Tuohy of Chesapeake & Ohio. Union chiefs, too, were heading eastward at about the same time

● **'Messy and expensive.'** While the industry and union heads streaked toward a Presidentially-supervised confrontation, the messy—and expensive—work of tying up the loose ends on the IC continued through the day and night.

IC supervisory employees brought in passenger trains to various terminals—some of them hours late.

IC's non-op employees, most of whom showed up for work, were an expensive aspect of the situation. Some of them even helped work the mimeograph machines that turned out the 20,000 or so notices required to abolish the thousands of non-op jobs that would have to be cut as IC shut down completely.

● **'Your position is abolished.'** By 4 p.m., messengers were delivering notices to IC yards, shops and offices that read: "In view of the strike of the operating craft employees, your position is abolished effective at the end of your tour of duty April 9, 1964."

IC's officers also began the intricate job of shutting down a 6,000-mile railroad.

Delbert Wood, IC's chief special agent, suddenly confronted with the need for safeguarding farflung property and equipment, asked operating officers to concentrate equipment so IC would have enough watchmen to go around.

Pickets appeared at IC's headquarters finally, bearing white cardboard signs marked with black crayon legends: "Legal strike—ICRR," indicating perhaps a complete absence of planning at the local brotherhood level as compared with the grand lodges.

● **Support from shippers.** One small bright spot for IC even as the railroad was being shut down, was a small flood of calls from shippers congratulating the road for taking a stand. Even some stranded commuters telephoned in similar sentiments.

But, despite the pickets that straggled onto IC's property at various times during the long, eventful day, most of IC's non-ops reported for work—and stayed. Exceptions were few: clerks stayed away from work at Champaign, and a scattering of non-ops failed to show up at other points. Apparently union strategists in Cleveland hadn't coordinated too closely with the non-ops — though there seemed to be no doubt that the non-ops would honor the pickets as the showdown came, no matter how amateurishly the picket signs were prepared.

● **Headache for the chief.** The long day could be said to have been finished in Washington. At the meeting called by Labor Secretary Wirtz, eight of the nine railroad executives called were present. Only two of the brotherhood chiefs showed up—and one of them is said to have left early with a headache. Noted one IC officer: "This indicates, to me at any rate, a substantial difference in attitude between the parties."

IC's whole situation was summed up late in the afternoon—when the crisis was almost exactly 12 hours old—by the road's director of personnel, Earl Oliver: "The IC is merely the target. If we got an injunction, it would only leave the unions free to strike another railroad. We are in this with all the railroads. This is the showdown." ■

Current Publications

NEW BOOKS

PUBLIC UTILITY ECONOMICS, by Paul J. Garfield and Wallace F. Lovejoy. 505 pages, tables. Prentice-Hall, Inc., Englewood Cliffs, N.J. $10.

MANAGEMENT OF TRAFFIC AND PHYSICAL DISTRIBUTION, by Charles A. Taff. Third edition, 614 pages, illustrations, maps, charts, tables. Richard D. Irwin, Inc., Homewood, Ill. $11.95.

TRANSPORTATION AND POLITICS, by Roy I. Wolfe. 136 pages. D. Van Nostrand Company, Inc., 120 Alexander St., Princeton, N.J. $1.45.

STEAM TRAINS OF THE SOO, by Leslie V. Suprey. Second Edition, 96 pages, illustrations. B&W Printers & Publishers, Mora, Minn. $5.

BRITISH RAILWAYS IN TRANSITION, by O. S. Nock. 193 pages, illustrations. Thomas Nelson & Sons, 18 East 41st Street, New York, 10017. $6.50.

NEW YORK PORT HANDBOOK 1964. 224 pages, illustrations, maps. The Port Resources Information Committee, Inc., 90 Broad Street, New York, 10004. $2.50.

URBAN RAIL TRANSIT: ITS ECONOMICS AND TECHNOLOGY, by A. Scheffer Lang and Richard M. Soberman. 139 pages, charts. Published for the Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University by the M.I.T. Press, Cambridge, Mass. $6.

THE LOCOMOTIVE ENGINEER, 1863-1963, A CENTURY OF RAILWAY LABOR RELATIONS AND WORK RULES, by Reed C. Richardson. 456 pages. Bureau of Industrial Relations, Graduate School of Business Administration, University of Michigan, Ann Arbor. $8.

EXPORT TRAFFIC MANAGEMENT POLICY; A STUDY OF EXPORT TRAFFIC MANAGEMENT POLICY OF SELECTED MANUFACTURING FIRMS. A doctoral dissertation, by Robert A. Kaye. 177 pages. Dr. Robert A. Kaye, George Washington University, Department of Government and Business, Washington, D.C., 20006. $2.50 in U.S.A., $3.00 foreign.

FREIGHT COMMODITY STATISTICS, CLASS I RAILROADS IN THE UNITED STATES, for the year ended December 31, 1962, prepared by the Interstate Commerce Commission, Bureau of Transport Economics and Statistics, 238 pages. Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. $3.

PAMPHLETS

CHICAGO-RAILROAD CENTER OF THE WORLD. 32 pages. The Association of Western Railways, 105 West Adams Street, Chicago, 60603.

AUSTRALIAN RAILWAYS TODAY: A PICTORIAL REVIEW, edited by J. Richardson. 86 pages, illustrations, map. Traction Publications, P.O. Box 438, Canberra (City), A.C.T., New South Wales, Australia. Available in U.S.A. from Owen Davies, 1214 La Salle Street, Chicago, 60610. $2.

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WABASH RAILROAD COMPANY

(Product Reference 44B)

B&O speeds tunnel job

(Continued from page 20)

portals had been completed. Mounted on the chassis of a Mack truck, a three-deck jumbo carried Gardner-Denver jack-leg drills that bored 90 to 100 holes in each face. The holes, about 4½ feet deep, were loaded with about 200 pounds of powder per round.

At each face, an Eimco 105 loader fed muck to Koehring Dumptors. Hard on the heels of the drilling and blasting work, steel ribs were set on 2-foot and 4-foot centers to support the shale through which the tunnel was being driven. The average rate of progress at each face was about 32 feet per day.

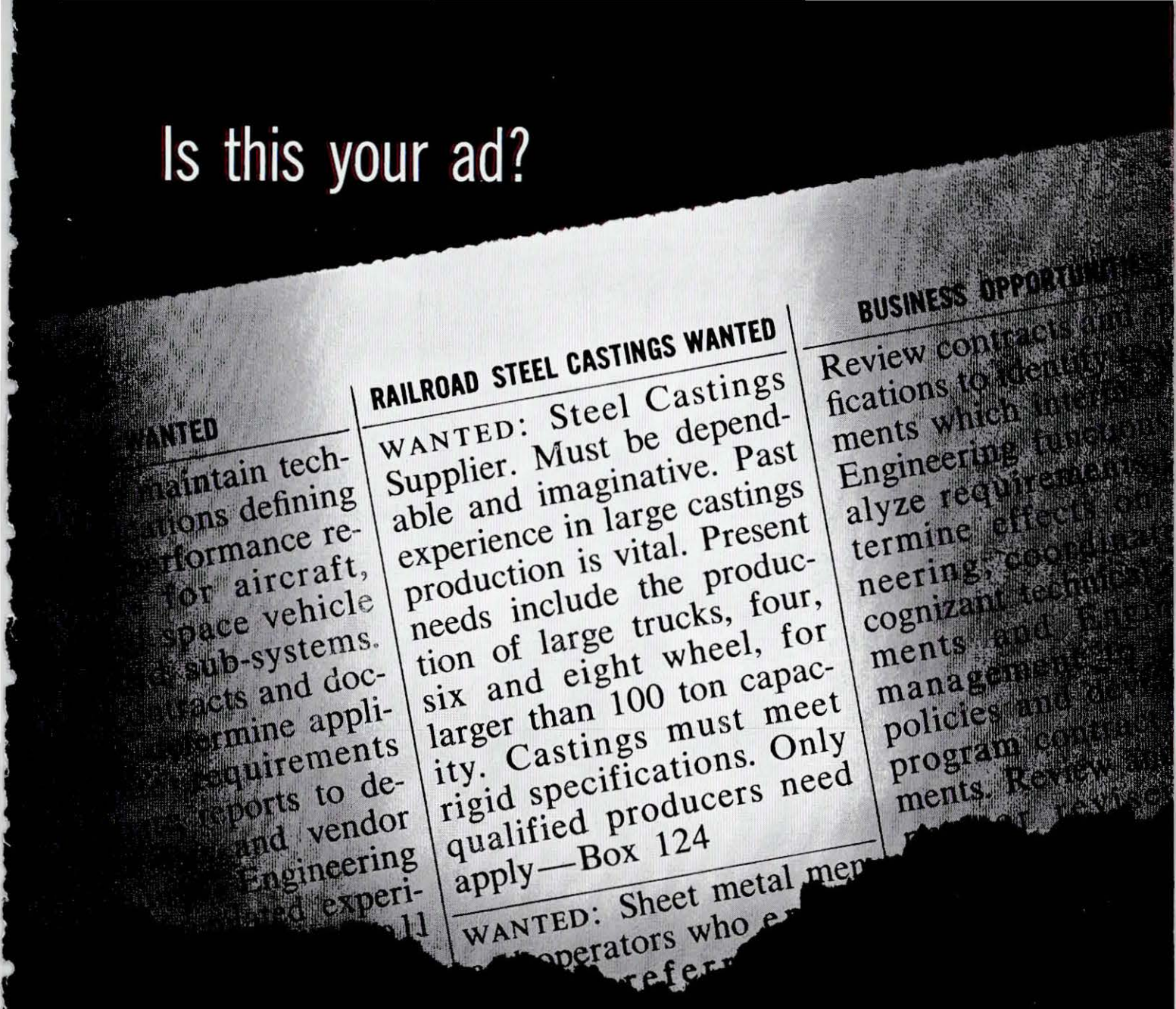
• **Concreting operations.** After the tunnel had been holed through, the contractor lost no time in starting to place the concrete for the lining. This operation was carried on in both directions from the middle. Two 50-foot sections were placed in each 24-hour period, using a pair of steel forms. Concrete, placed at the rate of 525 cubic yards per day, was pumped into the forms by pneumatic equipment. The ready-mix concrete was supplied by a 75-yard-per-hour batching plant erected at the site. Seven-yard transit-mix trucks hauled the mix to each of the two headings.

Starting at 7:30 in the morning, the first shift placed concrete. While the concrete was curing, the second shift aligned the form rails. The third shift stripped and re-erected forms for the following day's work.

• **Admixture was used.** This daily cycle was made possible through the use of a special concrete mix. Important features of the mix were the use of Type III (high-early-strength) cement and Sikacrete, a liquid chemical admixture designed to accelerate the setting of the concrete. The aim was to permit stripping the forms eight hours after placement of the concrete. At this time the compressive strength of the concrete had reached a figure in excess of the 1,500 psi required by the railroad's specifications.

Sikacrete, manufactured by Sika Corporation, Passaic, N.J., has been on the market for several years. In the past it has been used primarily for wintertime floor finishing. In addition to speeding the setting of concrete, this liquid admixture is said to provide both low-slump workability of the mix and increased flowability for pumping. For these reasons it was considered instrumental in helping the contractor pump 10,600 cubic yards of concrete in place in 21 working days. ■

Is this your ad?


RAILROAD STEEL CASTINGS WANTED
WANTED: Steel Castings Supplier. Must be dependable and imaginative. Past experience in large castings production is vital. Present needs include the production of large trucks, four, six and eight wheel, for larger than 100 ton capacity. Castings must meet rigid specifications. Only qualified producers need apply—Box 124
WANTED: Sheet metal
BUSINESS OPPORTUNITIES
Review contracts
Engineering
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program

Then call: Ⓑ Buckeye

Buckeye can do it!! Based on past experience and knowledge of steel castings—Buckeye is also best qualified. No one has more experience in the 100 ton and over truck business than The Buckeye Steel Castings Co. Buckeye's experience in producing diversified castings for America's railroads (60 years) has given Buckeye a tremendous amount of knowledge relative to steel castings. ***Use Buckeye's Experience, New Facilities and Knowledge to produce the castings you'll need to meet the increased demands of modern shippers.*** Buckeye can produce castings to carry the "big boys".

Buckeye is America's most versatile producer of freight car castings—

Write or Phone for the complete story . . .

Ⓑ **BUCKEYE**

THE BUCKEYE STEEL CASTINGS CO.

COLUMBUS, OHIO • CHICAGO, ILL. • ST. PAUL, MINN. • WESTFIELD, NEW JERSEY • SAN FRANCISCO, CALIF.

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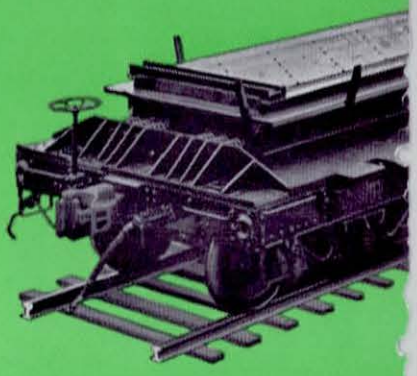
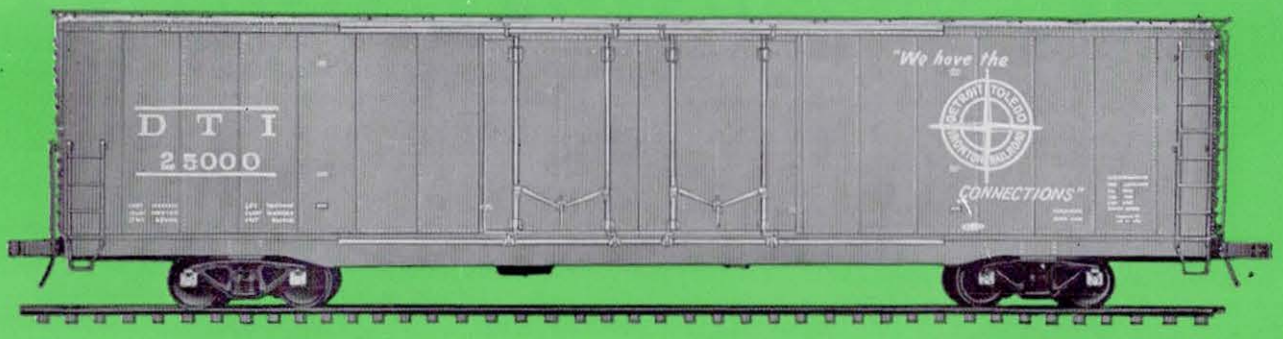
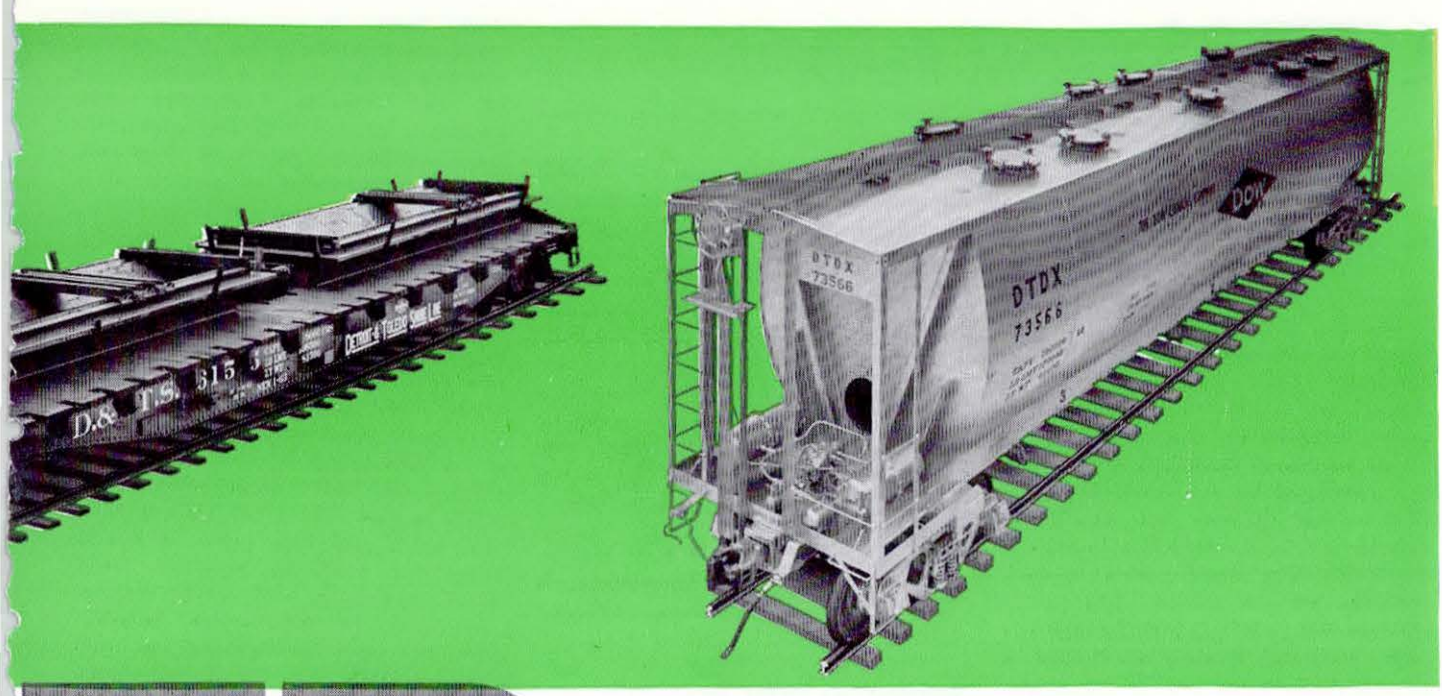


HANDLE KEY CARGO FAST





GR

If you need cars which handle more cargo at less cost, investigate the new cars coming off the line at Greenville. Many are already in revenue service . . . some leased, some purchased.

Greenville builds, rebuilds, or upgrades and fits these units with special features to meet specific customer requirements. Some of the newest designs were introduced first by Greenville.

The McGregor roof car is a 50-ton hopper converted to 70-ton to carry 25% more payload under a folding, water-tight roof. The coil car—new, or economically converted from a flat—carries steel coils in shock-proof cradles under removable covers. The aluminum and stainless covered hoppers do not require expensive linings.

If you have a key cargo which has to move faster at less cost, check your requirements with Greenville. The features you need may already exist in a Greenville design.

GREENVILLE STEEL CAR COMPANY
Subsidiary of Pittsburgh Forgings Company
GREENVILLE, PENNSYLVANIA

LETTERS FROM READERS

In-motion weighing

Montreal

To the Editor:

I have just read with much interest the article "Weighing Cars on the Run," in the March 9 issue of Railway Age. In order to supplement the brief description given of the CN scale A-105-10, I thought you might like to have the following information.

Our electronic in-motion weigh scale was developed by our research people after several attempts had been made here to obtain accurate fast in-motion weighing using weight scale systems available on the market. The major problem was to obtain a sufficiently accurate weighing. Railway scales used in Canada must be approved by the Standards Branch Weights and Measures Division of the Federal Department of Trade and Commerce. This authority requires a scale with a print out to have an accuracy better than ± 0.0375% of capacity for cars weighing less than one quarter of the rated scale capacity and better than ± 0.15% of the weights for cars heavier than this. Conditional approval to use the scale was granted after the first test and final full approval was given after the third test made by the Weights and Measures Inspectors. The government inspections were made on Aug. 12, 1963, Oct. 7, 1963 and Feb. 4, 1964.

You may be interested to know that the maximum error found on any one car weighing was 0.084% which was obtained under gusty winds up to 46 mph. The maximum error of all previous tests was 0.06%.

E. T. Hurley
Chief of Technical Research
Canadian National

Section 4: Why keep it?

Hinsdale, Ill.

To the Editor:

Non-transportation people who observe the transportation scene often are impressed by the disparity between modern technical advances within the industry and the rules and regulations under which the industry is governed. Government seems to lag. A prominent example of this involves Section 4 (1) of the Interstate Commerce Act. Originally devised to protect intermediate shippers and points of shipment, now it is suspected of serving as a drag on general commercial progress.

Its administration is costly. There is a vast amount of intricate, time-consuming calculation, deliberation; and the hearings require much time and expense. Even before questions concerning the 4th Section arise, the rate adjudicators must interpret the tariffs. They have about sixteen general types of rates, a larger number of specific types, and their applicability, with which to deal. There are various rules of priority and their practical effects under the tariffs to consider; tariff errors, omissions, and tariff routing, irrespective of 4th-Section involvement. Alertness, for indications of rule violation, while fulfiling its obligations as guardian of the reasonable route, is needed on the part of the Interstate Commerce Commission. Those and other aspects of routine rate regulation involve an immense amount of precise, explicit detail.

Add the duty of examining and passing judgment on applications for relief from 4th-Section requirements, and various ancillary questions that arise under the Act (some states likewise have rigid long- and short-haul provisions) to the other duties of rate regulators, together with the time consumed by claimants and applicants, and these questions arise: (1) Is it not time to reduce the work of the Rates Division of the Commission, and (2) is not the 4th Section a promising point at which to start?

Prohibition of place discrimination is included within the provisions of Section 3 of the Act. It reads: It is unlawful for a railroad to give ". . . any undue or unreasonable preference or advantage to any particular person, company, firm, corporation, association, *locality,* [underlined by the writer] port, district, gateway, transit point, region, territory . . ."

According to at least one authority on rates, D. P. Locklin, "The undue preference and prejudice prohibited by Section 3 is broad enough to include the special type of place discrimination prohibited by Section 4. In the Section 3 case, however, the burden of proving 'undue preference and prejudice' is upon the complaining party. This is not always easy to do."

Under Section 4 the burden of proof rests with the applicant for relief, so obviously one reason for continued reliance on Section 4, instead of per-

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mitting it to be substituted by Section 3, is to relieve the claimant against the railroad of the obligation of proving his case, and to continue the practice of requiring the railroad to carry the expense of proof. Here, too, seems to be an example of discrimination, of another kind.

Uneconomical routes? It is claimed that long- and short-haul discrimination encourages wasteful transportation, especially as regards circuitous routes. It is pointed out that a short route is always more economical than a long one, for which reason fewer exceptions should be granted in cases involving circuity.

One answer to this allegation of waste is found in the granted and pending railroad consolidations, which will automatically eliminate many circuitous routes. Anther is found in the desire of all railroads to keep their costs at the minimum. In this day of diesel motor trucks, paved highway networks, and increasingly versatile air lines and waterways, what prevents the intermediate shipper who feels that he is a victim of place discrimination from having his goods moved by another form of transportation? If the physical nature of his shipments is such that they must go by rail, it seems probable that the sales officer of any railroad would be eager to sit down with him and work out his problem in a way that is satisfactory to both.

Over-organization? In some respects, attempts to apply the 4th Section in this age of multi-agency competition in transporation resemble a business that is over-organized: Too many commttees; too many rules; job analyses and directives that try to dictate the operator's every move, leaving insufficient prerogative and initiative to him. It never works well. The possibilities of self-regulation against place discrimination within the railroad industry have not been thoroughly explored; certainly not in the light of present-day conditions and trends.

The broad effects of long- and short-haul legislation. They go beyond the particular intermediate point and its shippers. Also affected are the carriers, and the public at large. Basically, the nature of railway expenses has much to do with the alleged discrimination. The advocates of retention of Section 4 apparently do not thoroughly understand that a large proportion of a railroad's expenses are constant overhead costs which do not vary with local traffic fluctuations. There is an obvious inconsistency in holding management responsible for meeting all overhead costs while limiting managerial discretion in the setting of rates that provide the income for meeting those costs. A healthy railroad industry surely is in the public interest, and the interests of the public at large take precedence over those of the relatively few claimants under Section 4. Most of these claimants are not tied to the rails; the cases of those that are can usually be settled "out of court."

The Alabama Midland Case in the light of present conditions. After its passage in 1887, Section 4 was in effect until some southern railroads took the position that the competition existing at through points and not at intermediate points, created a dissimilarity of conditions and circumstances of haul as were contemplated under Section 4 as constituting valid cause for higher rates to intermediate stations. These railroads further contended that they were able to judge for themselves whether they were entitled to relief from Section 4, without applying to the Commission.

The position taken by the southern roads was upheld by the Supreme Court in 1897. For the next twelve years the long- and short-haul clause was abandoned. In another case involving the clause the Supreme Court said: ". . . it has been settled by this court that competition which is controlling on traffic and rates produces in and of itself the dissimilarity of circumstances and conditions described in the statute. . . ."

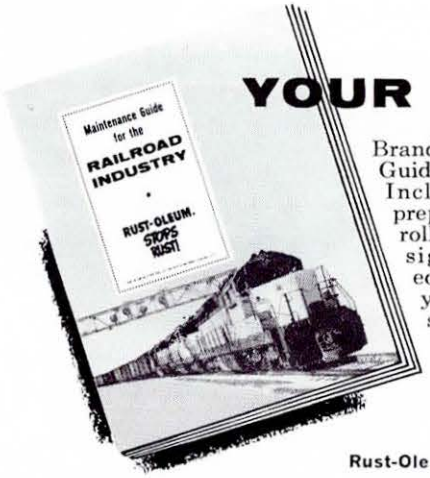
In 1910 the long- and short-haul clause was amended by the Mann-Elkins Act, which eliminated the "dissimilarity of circumstances and conditions" (from the statute at least) and placed administration of the clause under the discretion of the Commission.

It should be remembered that the conditions under which the Alabama Midland case arose were those of single-mode inter-city land transportation. If under those conditions and during that era the element of competition could be sufficiently compelling to cause the Court to nullify Section 4, what of today?

Section 4 and present-day competition. The array of competition now facing railroads is so formidable that place discrimination, as it has been known in the past, is rapidly fading out. The reader is referred to any reliable 1964 commercial atlas that has comparable maps showing rail lines, paved highways, air lines, waterways, and pipe lines. It will readily be seen that both the paved highways and the air lines outnumber the rails in mileage. Highways outnumber the railroads in points of pick-up and delivery. Rail mileage is shrinking, while the mileage of every competitor is being extended.

Here, apparently, lies the chief reason Section 4 no longer is valid. Add the other reasons and Section 4 becomes a highly tenuous piece of legislation. Those in the transportation business know that the country would be better off without it. Citizens and public servants should, too.

Hugh G. Dugan



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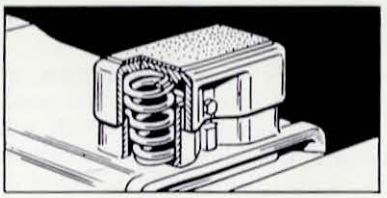

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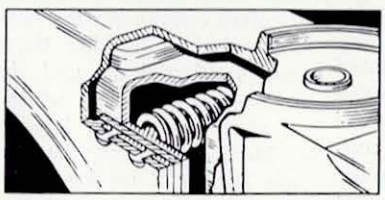
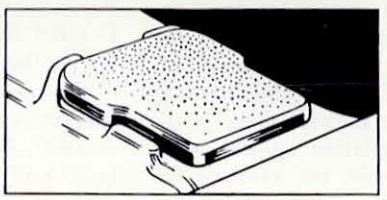


Contacting friction plates between bolsters control lateral motion and shock effect on lading and equipment.



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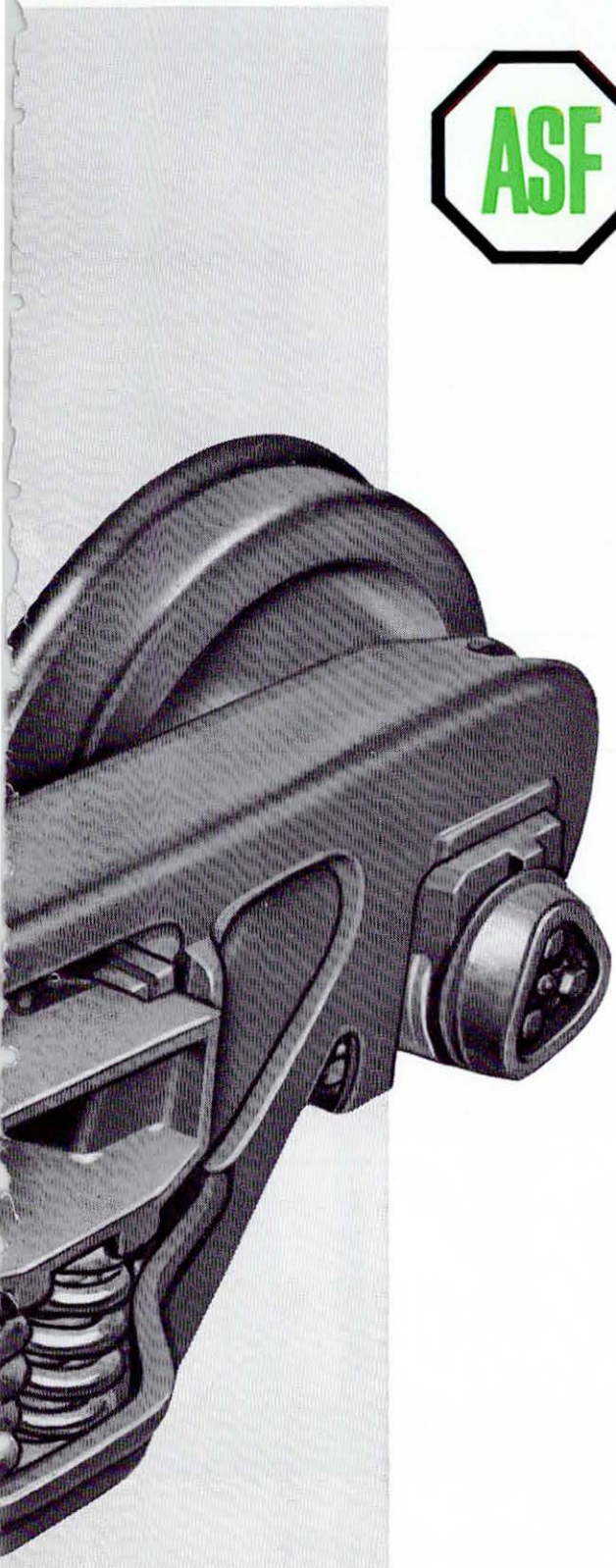

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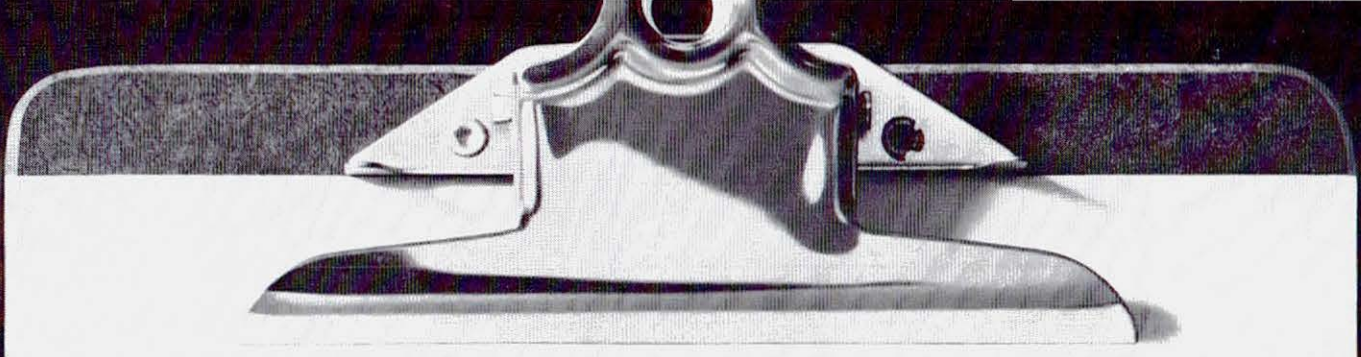

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Provides consistently dependable cushioning. Cuts dead weight. Eliminates costly maintenance

	BRAND			
	ACF	X	Y	Z
Free of springs	Yes	No	No	No
Air return	Yes	No	No	No
Self-contained	Yes	No	Yes	No
Metering pin	Yes	No	Yes	Yes
Available in 20″ travel	Yes	Yes	Yes	Yes
Available in 30″ travel	Yes	No	Yes	No
Made, sold, and serviced by same organization	Yes	No	Yes	Yes
True hydraulic	Yes	Yes	Yes	No
Return travel snubbing action	Yes	No	No	No
Adjustable centering force	Yes	No	No	No
Unit weight installed (lbs.)	2200	3700	3000	2400

manages other economies so that the Freight-Saver is as much as 1,500 lbs. lighter than other center-of-the-car cushioning systems.

And, because the ACF Freight-Saver is self-contained and has no need for return springs, it is the easiest system to install.

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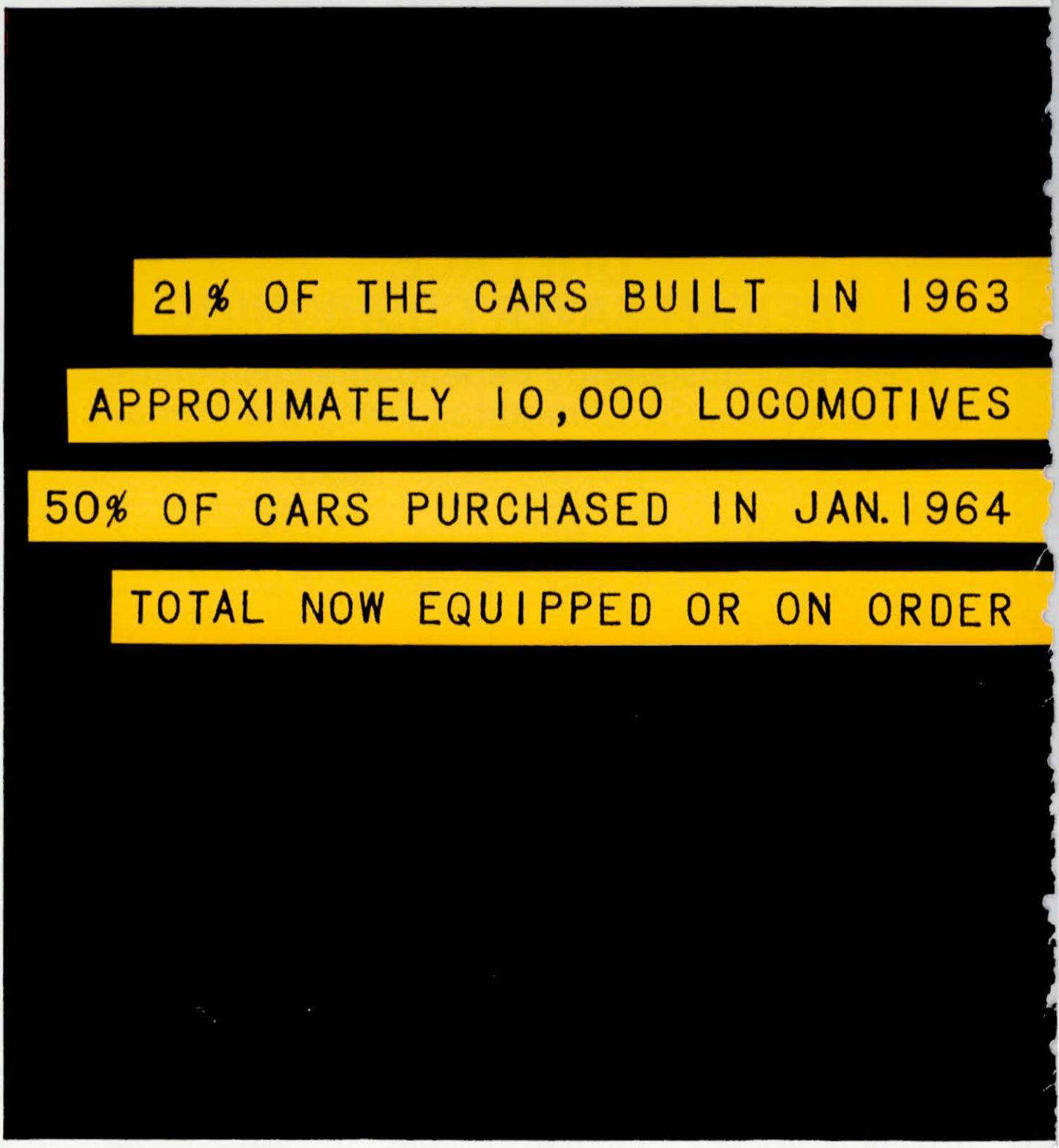
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APPROXIMATELY 10,000 LOCOMOTIVES
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TOTAL NOW EQUIPPED OR ON ORDER

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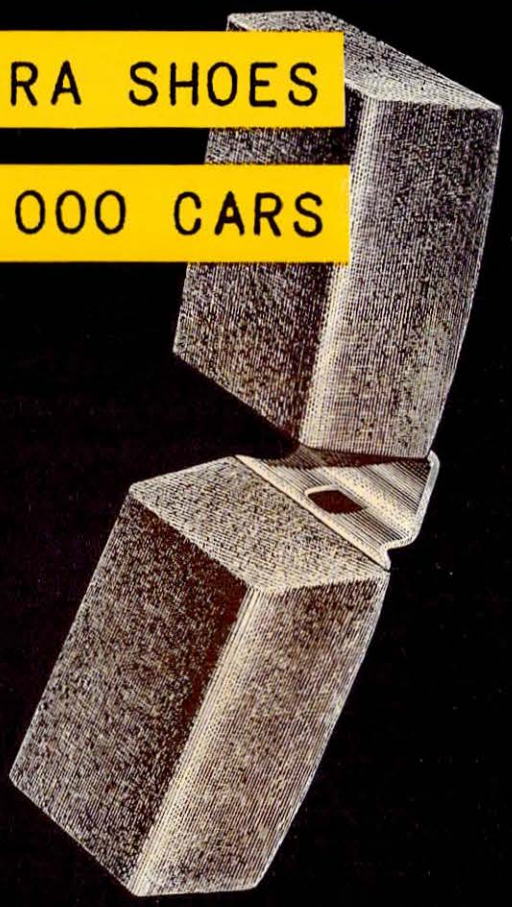

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● **THE RAILROADS' SHARE** of the national income continues its uninterrupted decline. The ICC's Bureau of Transport Economics and Statistics calculates that the ratio of railroad revenues to national income was only 2.1 last year, down from 2.2 in each of the two previous years. The 1963 ratio is thus less than 40% of 1939's 5.7, the earliest year covered by the Bureau's compilation. Meanwhile, the ratio for regularly-scheduled domestic air lines grew to six times what it was 24 years earlier—0.6 compared with 1939's 0.1. Moreover, the revenue factor here is understated, as it is in the air line figures for earlier years. It does not include revenues of supplemental (non-scheduled) air carriers, which have become more important in recent years. Their 1962 gross amounted to $107 million, up $25 million from 1961.

RELATIVE GAINS OF TRUCKERS have been less than those of the air lines, but the motor carriers have more than held their own. Their 1963 ratio of 1.8 was the same as those of 1962 and 1961. It compared with a 1939 ratio of 1.1. Bus companies and pipe lines under ICC jurisdiction had the same ratio in 1963. It was 0.2, the same as they both had in 1939 and for every year since 1950.

NO WATER CARRIER RATIOS are included in the compilation. Explaining the omission, the ICC Bureau said revenues of water carriers reporting to the Commission cover only an "undeterminate" portion of total amount paid for all for-hire domestic water transportation.

A NOTE OF CAUTION about use of the ratios is sounded by the Bureau. It says they are useful only for comparison of trends, and warns that they should not be interpreted as indicating percentages which revenues of the different transportation agencies bear to total national income. That's because of statistical adjustments to eliminate duplications in computing the national-income figures. Portions of transportation revenues paid to other industries for supplies and services constitute income to those industries, the Bureau explains.

ON AN INDEX BASIS, with 1939 as 100, the national-income index for 1963 was 657.1. The upward movement of railroad revenues was relatively much slower. But their 1963 index of 239.5 was a gain. It was up three points from 1962's 236.5, and the best since 1959's 246.5.

THE AIR LINES' REVENUE INDEX set the pace. At 4,794.3 for 1963, its relative gain since 1939 was about seven times that of national income. The relative increase in truck revenues was less spectacular, but it reflected a growth rate approaching five times that shown for railroad revenues. The 1963 truck-revenue index was 1068.3, up 31.9 points from 1962's 1026.4.

● **FIRST WOMAN** member of a Presidential emergency board is Dr. Jean T. McKelvey, of the Industrial Relations Department of Cornell University. She was appointed by President Johnson to the board he created to investigate the dispute involving rules-change demands of unions representing railroad shop-craft employees. Other members of the board are its chairman, Saul Wallen of Boston, and Arthur M. Ross, professor of economics at the University of California.

Telpak tariff: Is it fair?

A tentative FCC ruling finds the existing discriminations in charges are not justified.

In a tentative decision, the Federal Communications Commission has ruled that the existing Telpak tariff is unreasonably discriminatory. Telpak is American Telephone & Telegraph Co.'s offering to meet the challenge of private microwave systems to provide bulk communications facilities. Specifically, the Commission ruled that Telpak A (12 voice channels) and Telpak B (a 24-voice channel offering) are not justified by competitive necessity. Telpak C (60 voice channels) and Telpak D (240 channels) are not compensatory at present rates, the Commission noted. Concerning Telpak C and D, informed sources indicate that the FCC left the door open for AT&T to file a revised tariff at higher rates.

● **Immediate effect is small.** The effect upon railroads, who are large users of Telpak, is probably more psychological than material. Those in the know, both in Washington and elsewhere, say that there is much legal groundwork ahead before railroads would have to prepare for replacement of Telpak channels they are now using. First: this is a tentative decision. Second: the deadline for filing exceptions and requests for oral arguments is May 4. (AT&T says it will file exceptions.) Third: after consideration of the exceptions, hearing of oral arguments and studying reply briefs, etc., it may be late summer or early fall when the Commission issues its final decision. Fourth: if revised tariffs must be filed, another 60 to 90 days may pass before they become effective. And fifth: Telpak customers could appeal the final Commission decision to the federal courts.

● **The FCC's thinking.** Spelling out its major conclusions in the tentative Telpak decision, the FCC said:

● "Services furnished under the Telpak tariff and those furnished under the various private line tariffs are like communications services.

● "There are material cost differ-

ences attributable to furnishing a number of channels to one customer under Telpak, as opposed to furnishing the same number of channels to several customers under the other private line tariffs.

- "There is no justification for Telpak A [12 channels] and Telpak B [24 channels] in terms of competitive necessity, inasmuch as the rates for the equivalent number of channels offered under ordinary private line tariffs are reasonably competitive with the costs of private microwave systems.
- "There is apparent justification for Telpak C [60 channels] and D [240 channels] classifications in terms of meeting competition from private microwave systems having channel capacities comparable to those offered by such Telpak classifications. However, we are unable to determine on this record that the rates for Telpak C and D classifications are compensatory in relation to the costs of furnishing the services offered thereunder and, therefore, are unable to find the other users of AT&T services will benefit and not be burdened by the application of such rates."

As to the import of its decision, the FCC stated: "On the basis of these conclusions, it follows that AT&T has not justified the discriminations in charges for like communications services found to exist between the Telpak classifications on the one hand, and the ordinary private line classifications on the other hand.

"In so concluding, we do not intend that this decision, based solely on the facts of the record now before us, shall be construed as foreclosing carriers from establishing schedules of charges which will promote the use of volume communication or stimulate the growth of the communication market, generally.

"In proposing such schedules, whether the purpose be to meet competition or attract business which the carriers would not otherwise enjoy—which was the apparent reason for Telpaks C [60 channels] and D [240 channels]—a carrier [telephone company] will be expected to show that the proposed rates will not have an unlawful effect on competition, will benefit and not burden the users of other services of the carrier and will not otherwise result in any unjust or unreasonable discrimination."

The Telpak tariff has been in effect since 1961. Hearings held that year found Western Union Telegraph Co., and Motorola, Inc., opposed. AT&T and a number of Telpak customers, including the General Services Administration and the Department of Defense, supported the tariff. Reports indicate that there are 950 Telpak customers, paying about $90 million yearly for the service.

Following the FCC tentative decision, AT&T declared: "Customer requirements show that there is a vital need for Telpak service, it pays its own way, and we intend to file exceptions with the FCC at the earliest possible date."

Engineers: Joint parley

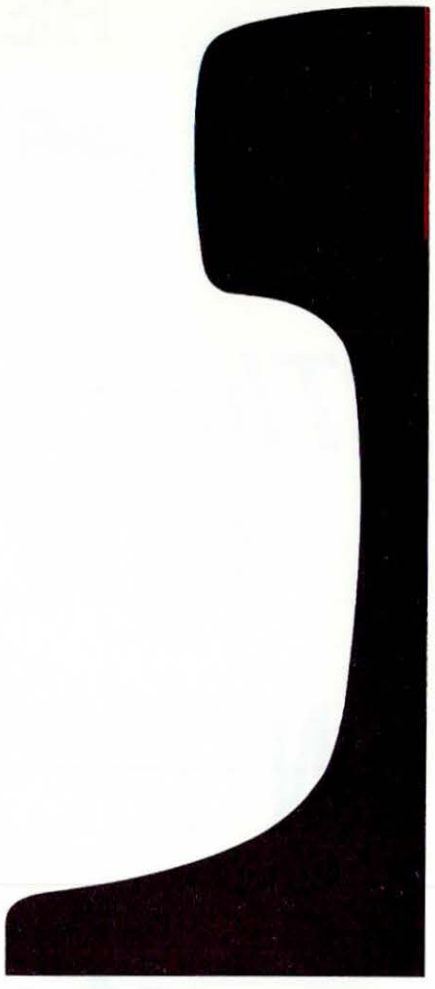
A joint Railroad Conference, sponsored by the American Society of Mechanical Engineers and the Institute of Electrical and Electronics Engineers, will be held April 14 and 15 at the Cleveland Engineering and Scientific Center, 3100 Chester St., Cleveland, Ohio. The program for this Conference is as follows:

Tuesday, April 14, 9:30 a.m.—Simultaneous Operator-Vehicle Control on a Single Radio Channel—R. B. Haner, General Railway Signal Co.; Integral Train Hopper Car Unloading Equipment—R. V. Emling, General Electric Co.; Standard Engineering for Standard Electrification—L. B. Curtis, Department of Highways, Commonwealth of Pennsylvania.

Tuesday, April 14, 2:00 p.m.—The Pioneer III Truck-Technical Aspects—A. G. Dean, Budd Co.; Modern Efficient Silicon Rectifier Type Multiple-Unit Cars for Philadelphia Area Commuter Service—S. V. Smith, electrical engineer, Pennsylvania; A Unique Propulsion System for Electric Multiple-Unit Cars for Philadelphia Area Commuter Service—H. S. Ogden, General Electric Co.

Wednesday, April 15, 9:30 a.m.—Engineering Achievements in the New Tokaido Line and its Automation and Remote Control System—I. Kato and H. Yoshimura, Japanese National Railways.; The Status and Promise of Containerization in the U.S.—A. J. Gellman, North American Car Corp.; Maintenance Parameters for Extended Operating Mileage between Overhauls of Traction Motors—M. R. Gaddis, mechanical design engineer, Southern Pacific and J. A. Rutherglen, General Electric Co.

Wednesday, April 15, 2:00 p.m.—Thermoelectric Water Coolers—J. D. Mees and C. F. Ter Bush, Westinghouse Electric Corp.; Brushless Generator for Auxiliary Power Supplies on Cars—W. Sackman and D. Schmitt, Safety Electrical Equipment Corporation.



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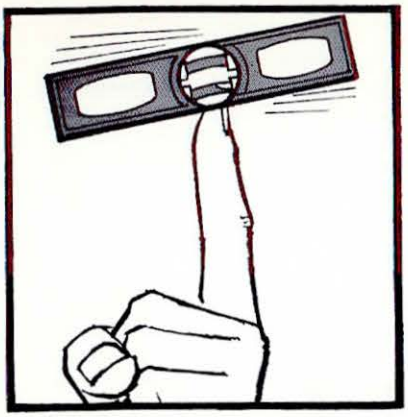
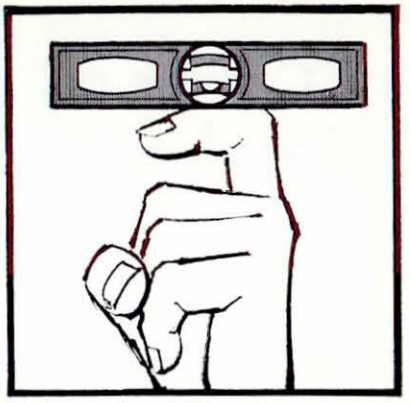
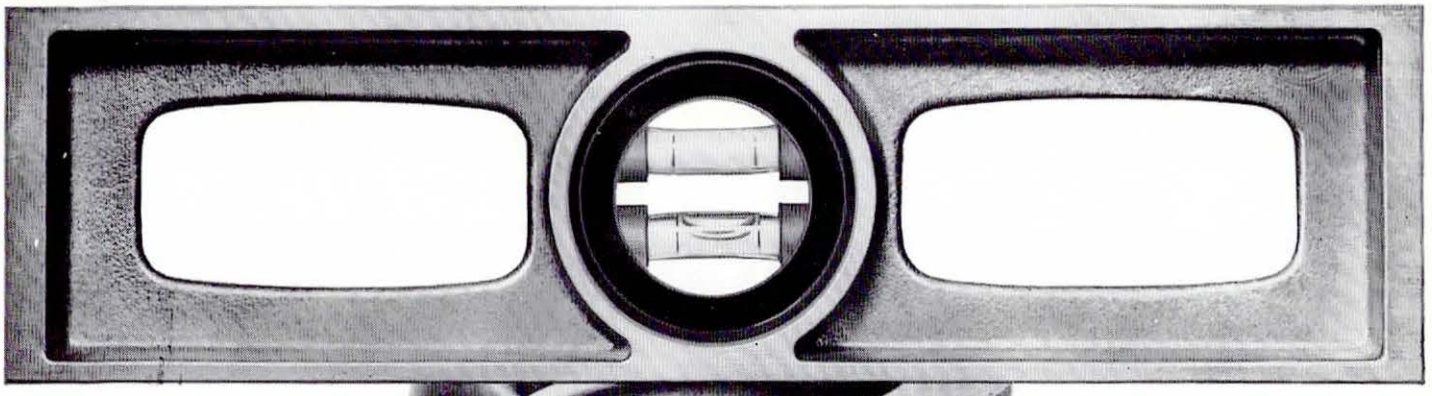


The tip of your finger is round . . . try balancing a level on it. Think it's easy?

◀ This demonstrates the advantage of Henry Miller's Rite-Angle coil spring—an exclusive feature at no extra cost. ▶



But put the level on the 'flat' of your finger . . . it's a cinch to balance!



ICC rules on piggyback

(Continued from page 17)

are applicable only over the joint intermodal route.

"In substance, then, Plan I merely embraces a simplified form of tariff publication, which combines a joint motor-rail rate applicable over the alternate all-highway routing. The net effect of [our] conclusions is to allow only motor common carriers subject to Part II to participate in Plan I service arrangements and to preclude participation by contract carriers as well as by unregulated carriers generally."

The Commission went on to suggest that its determination to make open-tariff, all-rail services available to all comers would ease the impact of the foregoing. That determination is embodied in Rule 3 which makes the open-tariff service available to contract truckers as well as motor common carriers. It may also be used, of course, by water carriers and for the transportation of commodities not subject to Commission regulation, such as agricultural products handled by truckers.

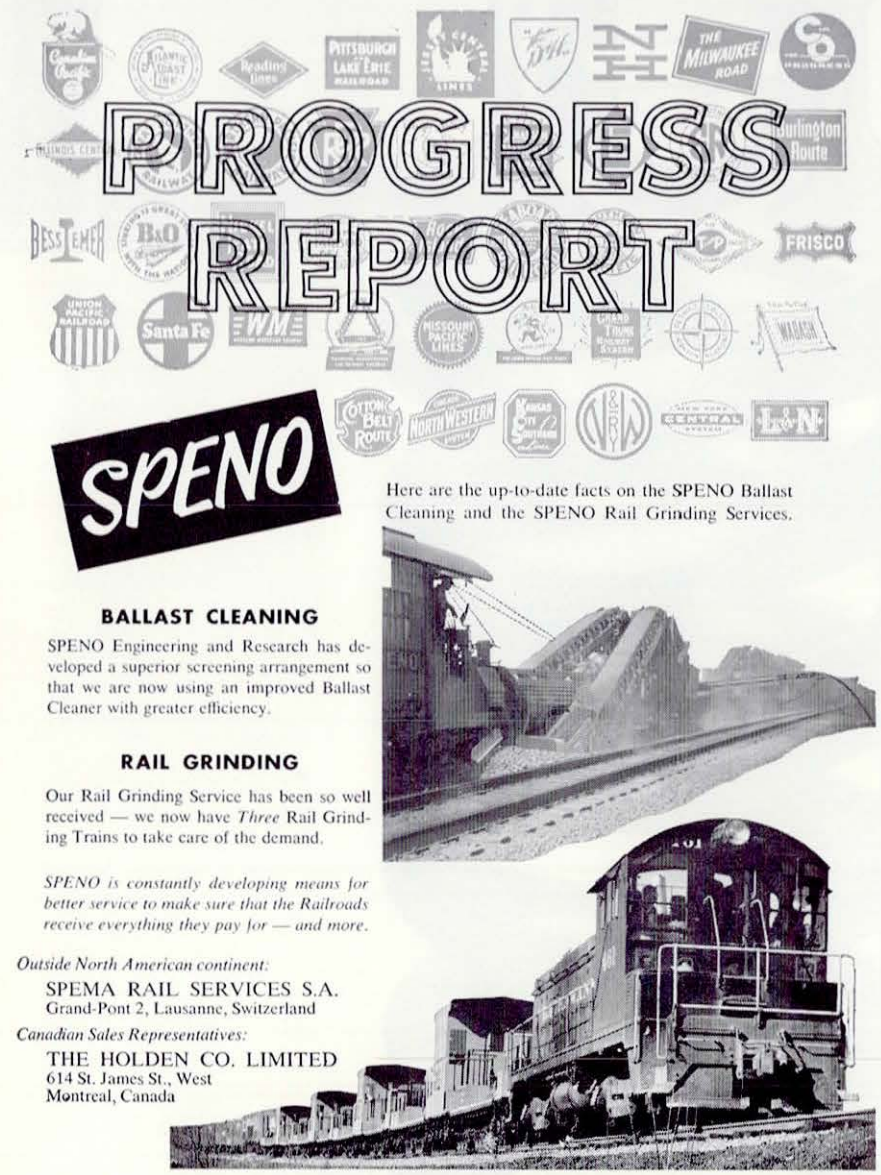
● **Leasing of equipment.** As to railroad leasing of trailers and flat cars to shippers in connection with Plans III and IV operations, the Commission rejected contentions that it should be prohibited. At the same time it concluded that the rental charges and arrangements should be published in tariffs. The prescribed rules will also require publication of various accessorial charges, such as those for loading services performed by railroads on Plans III and IV freight.

American Trucking Associations was the principal proponent of a ban on railroad leasing of equipment. While the Commission, as it said, recognized that present practices afford opportunities for discrimination, it expressed disagreement with ATA's suggestion that "the only available cures are a straitjacket for TOFC tariffs and major surgery to excise trailer leasing." Should the rental-publication approach prove ineffective, however, "additional steps can be taken at some future time," the Commission said. The rental-publication requirement will apply to railroad affiliates leasing trailers or flat cars to shippers as well as to the railroads' own leasing arrangements.

● **Payments to unions.** Payments to labor unions for each trailer moved in TOFC service have become "common practice," the Commission said. It added that the pre-trailer levy is usually $5 which goes into the union's pension or welfare fund. The Commission disagreed with the view of Examiners Boss and Ries that this matter was beyond the scope of the present case, but it found itself without power to do anything about it.

"This is not to say that we approve such arrangements," the report added. "We have said repeatedly that we favor the increase of intermodal transportation generally, and the growth of TOFC service in particular, and it seems clear to us that labor contracts such as these must have a deleterious effect upon their development. Any remedy for this situation, however, must lie not with this Commission but with the Congress.

● **Not the last word.** Meanwhile, the report had emphasized that nothing it did should be taken as the Commission's last word on piggybacking rules. It said: "We cannot help but be aware that the development of TOFC transportation is not at a standstill, and that whatever we do here will not be the final and definitive word on all the ramifications of piggyback service. If any of the regulations to be adopted here should prove in practice to have the unwanted effect of in any way hampering the flexible development and free use of TOFC service, we feel sure that this fact will promptly be called to our attention by the affected carriers or shippers so that appropriate remedial steps can be taken." ■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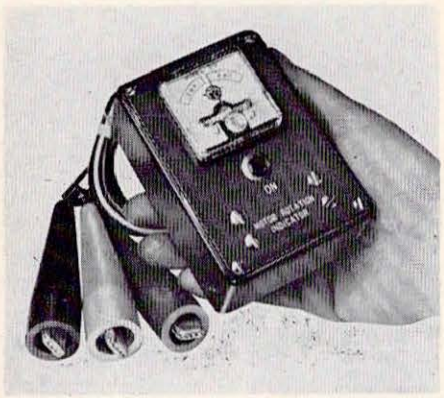
NEW PRODUCTS REPORT

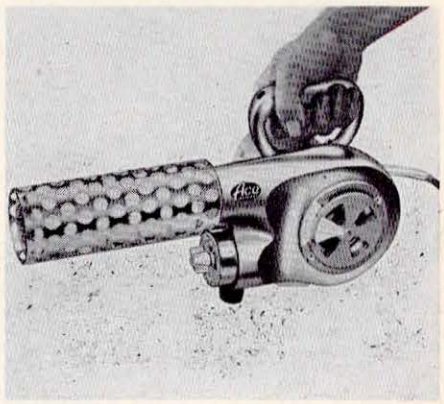


Rotation Indicator (RA-1)

The Model 50 motor rotation indicator gives positive indication of shaft rotation direction in unmarked multi-phase motors and identifies phasing of transformer windings. It is said to guard against costly damage to electric motors and transformers by indicating proper hook-up of power-input leads. The instrument is easy to read and weighs less than 1 lb. It measures 1⅝ x 2¾ x 4 in. and can be carried in a pocket. *Associated Research, Inc.*

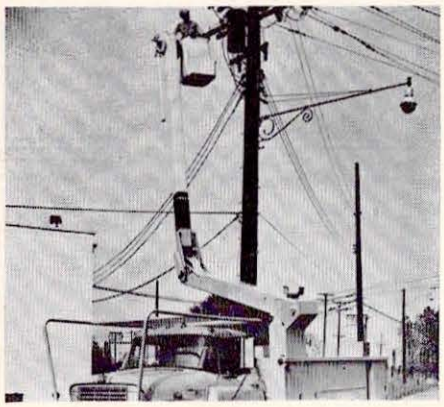
Steam Hose (RA-2)

Type 205MB red-tube hose withstands saturated steam up to 200 psi and 388 deg F., also superheated steam for short periods of time. Minimum safety factor is 10 to 1; industry standard, 8 to 1. Hose of one-wire construction has built-in static wire; two-wire braid, two static wires. Hose lengths of 25 and 50 ft are ½ to 2 in. ID. Lengths up to 100 ft, in sizes up to 1 in., may be had on request. Couplings are interlocking clamp type. *Gates Rubber Co.*



Flameless Torch (RA-3)

Heating without flame, the Ace electric torch can be used to soften or set plastic, heat seal or mold, shrink or expand materials, or thaw frozen pipe. Heat is controlled by an air valve or shutter, and air pressure is supplied by a high-speed blower. The nozzle is said to remain cool enough to touch. Model E-1X has a temperature of 160 deg F; Model 202, a range of 200 to 500 deg F, and Model E-3, 350 to 700 and 500 to 1,000 deg F. *Ace-Sycamore, Inc.*



Utility Elbows (RA-5)

A new series of elbows featuring completely enclosed arm actuating cylinders is available in 40, 45, 50 and 55-ft models. Holan series 8500 lifts up to 1,800-lb payloads at 70 deg or more from horizontal.

The new elbow is capable of handling up to 750-lb payloads in critical flat-out positions. The upper arm travels 270 deg, the lower arm moves 100 deg and the elbow rotates 370 deg in either direction. *Holan.*

Anti-Static Poly Bags (RA-4)

Heavy-duty polyethylene bags with anti-static properties are said to offer important advantages to packers, distributors and consumers. The bags, it is claimed, are easier to open and pack, because the "clinging" of static-charged plies is eliminated. Top-seal closures are easier and more reliable. The bags stay clean, and marking remains clearly visible for longer periods, because there is no static to attract dirt. *Chase Bag Co.*

RAILWAY AGE WEEKLY

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. George Johnson)

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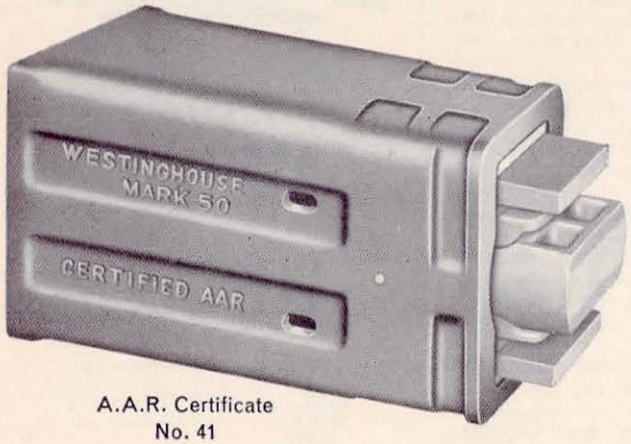
UNCONDITIONAL PROTECTION UNCONDITIONAL APPROVAL

the first and only draft gear to win unconditional approval under A.A.R. specification M-901E!



A.A.R. Certificate
No. 41

MARK 50

Protect your investment! Install the high-capacity Westinghouse MARK 50 Friction Draft Gear. It is the *first* and *only* gear to earn UNCONDITIONAL APPROVAL under Specification M-901E, after two years of proven service on 55 railroads and private car lines.

A shopped car means maintenance expense and lost revenue. Stop these costly problems with the rugged MARK 50! Applied to 24⅝ inch pockets having new A.A.R. car construction standards. (Protect sliding sills, too, with an efficient Westinghouse Draft Gear at each end!) Specify Cardwell Westinghouse!

CARDWELL WESTINGHOUSE COMPANY

TM

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Canadian Cardwell Co., Ltd., Montreal 2, Quebec

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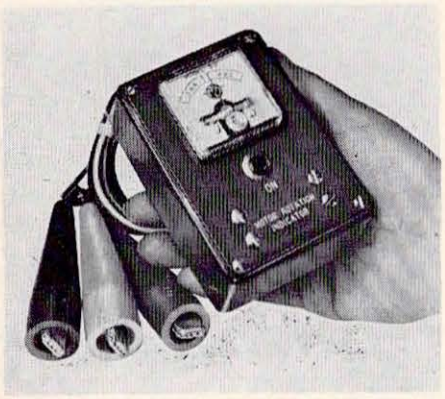

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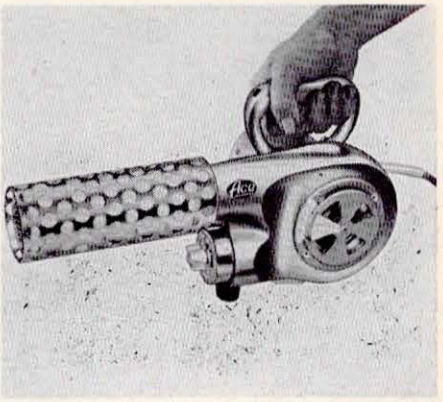

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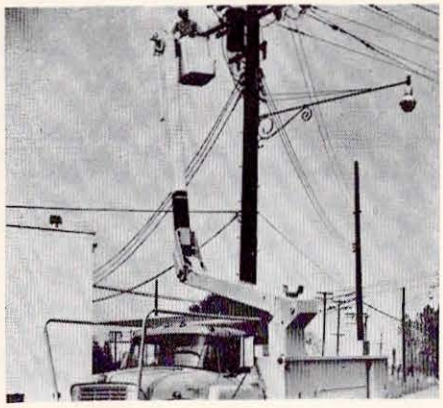

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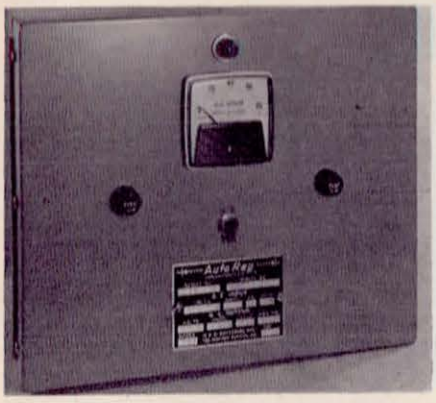


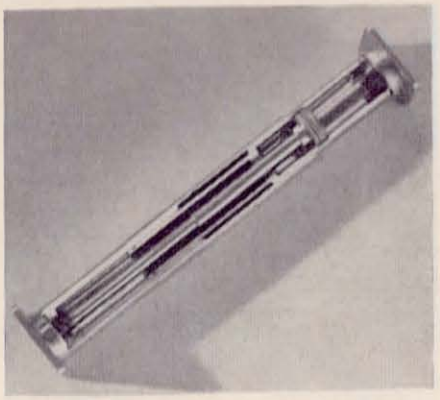
Battery Charger (RA-6)

A constant voltage battery charger is available that is designed for use at railroad-highway grade crossings to provide power to operate flashing-light signals and/or gates. Model AARF operates from a 115-volt, single phase, 60-cycle AC supply. Outputs are 10, 12, 24 and 48 volts at 1, 3, 6 and 9 amp.

C&D AutoReg silicon chargers are constant voltage, current limiting type, solid state (silicon diodes) units that provide a nominal output of 2.20 volts per cell for use on lead calcium cells, reports the manufacturer.

A thermo relay will raise the float voltage to nominal 2.35 volts per cell when the ambient temperature drops to 30 deg F and returns to normal when the temperature is above 30 deg F.

The charger is housed in a metal cabinet, complete with voltmeter, AC, DC fuses, pilot light and on-off switch. DC output voltage regulated to within ±1% for AC line voltage variation of ±10% for loads between 10-100% rated capacity. *C & D Batteries.*



Cushioning Device (RA-7)

The Sensi-Load cushioner is a completely sealed unit with only one moving part, the piston. The combination liquid and shock absorber relies on a special compressible liquid for its performance. In its resting position, the liquid is partly compressed, providing resistance for low-velocity couplings. Under impact, the liquid is further compressed by the piston and forced through an orifice into another chamber until impact energy is dissipated. As impact stroke of piston increases, a metering pin slows the flow of the liquid through the orifice. Under increasing pressure, the silicon oil fluid increases in viscosity. In effect, the fluid senses the weight of the car as well as its velocity, effectively cushioning both lightly and heavily loaded cars. Additional pressure built up in the compressible liquid produces return stroke of piston. Mounted in center of car sill, the cushioner absorbs shocks from either end with a piston stroke of 20 in. The cushioner is guaranteed to be maintenance free for five years. *National Steel Corp.*

Fault Tester (RA-8)

Model 370A cable fault locator can detect, pinpoint, and analyze faults on communications and power cables up to 30 miles away. By transmitting either high-voltage pulses (125 volts nominal) or low-voltage pulses (5 volts nominal) down the cable and then observing their echoes on the cathode-tube display, the operator can discern any cable fault, or discontinuity. Such a fault in the cable will cause a deflection of the display's predetermined baseline.

Opens will appear as positive or upward pips, shorts and grounds as negative or downward pips, and discontinuity magnitude as directly proportional reflected pulse amplitude, reports the manufacturer.

The instrument's ultra-linear, full-scale calibrated sweep ranges of 1, 3, 10, and 30 miles permit rapid pinpointing of the fault location. Its unique hybrid transmit/receive circuit prevents transmitted high-voltage pulses from masking close-in faults. Pulses of 0.2, 0.5, 1.0, or 10.0 micro-seconds can be transmitted. *Sierra Electronics.*

Bolt Plier (RA-9)

In this plier a threader slot below the head is designed to hold through bolts. This makes removal or installation of the nut easy and much safer by keeping all the work on one side of the pole. The awkward position of holding the head of the bolt with a wrench and reaching around the pole to turn the nut is obviated. The plier is designed to hold a ⅝-in. diameter threaded bolt and has been found useful for cleaning ⅝-in. threads. *Mathias Klein & Sons, Inc.*

Hammer (RA-10)

A new hammer has a head of drop-forged alloy steel with the popular straight claw. Maximum face bevel and crown minimize possibility of chipping. Handle is second-growth hickory and is triple wedged into a tapered eye.

A neoprene handle permanently bonded offers a resilient comfortable non-slip grip. Available in two weights: No. 801-16 with 16 oz. head, over-all length 14 in. and No. 801-20 with 20 oz. head, over-all length 16 in. *Mathias Klein & Sons, Inc.*

Plane Swivel Joint (RA-11)

With the plane swivel joint for loading and unloading arm applications, a choice of joint and seal materials may be had to handle conveying requirements of many chemicals, in addition to oils, gasoline, air, water, gas and hydraulic fluids. Joints, designed to eliminate hose twisting, move 360 deg in one or two planes, depending on style of joint needed. Sizes 1 in. to 4 in. are available in straight, angle or double-angle configurations. *Aeroquip Corp.*

...AND FRUIT GROWERS EXPRESS

HAS 687 MORE JUST LIKE IT!

Since buying their first Model 230B Transicold Diesel refrigeration-heating unit in 1960, Fruit Growers Express Co. of Washington, D. C. — the nation's largest hauler of perishable piggyback freight — has purchased 687 additional Transicolds — and now over 50% of the F.G.E. fleet are Transicold Diesels. And what's the biggest reason? Transicold Dependability!

TRANSICOLD & DEPENDABILITY— BYWORDS IN PIGGYBACKING!

Transicold Dependability is centered around its patented Permanent Magnet Generators — that have no wearing parts; its rugged, oversized Carrier compressors; and its economical, wet-sleeved Perkins diesels.

Here are just a few of the railroads that have begun using Transicold Diesels since Fruit Growers Express first tried Transicold Dependability in 1960: Chicago-Great Western, Denver and Rio Grande-Western, Kansas City Southern, Milwaukee Motor Transportation, Northern Pacific Transport, Pacific Fruit Express, Baltimore and Ohio, and the Western Pacific Railroad.

And remember: Transicold Dependability is now available either underslung or "on the nose"— either 7½ ton or 10 ton capacity! Write today for more information.

TRANSICOLD Corporation, 1100 South Taylor Avenue, Montebello, Calif.

Rocky, the Great Northern goat, says

"Who likes dirty boxcars? Not you. Not us. That's why Great Northern has a couple of the greatest car-cleaning facilities you ever saw. One at Everett, Washington. The other at Grand Forks, North Dakota. And both of 'em set up with modern, mechanized equipment for everything from steam-cleaning to nail flattening. Want your next shipment to move in a clean car? The odds sure favor calling your nearest GN Traffic Representative."

GN

GREAT NORTHERN RAILWAY

RAILROADING AFTER HOURS WITH JIM LYNE

MAKING RAIL TRAVEL ATTRACTIVE—The head of the sleeping car porters' union, A. P. Randolph, is urging his members to treat passengers well, and thus encourage travel by rail (so reports the paper Labor). The behavior of employees who deal directly with the public (porters, trainmen, ticket sellers) can make or break a railroads' image with the public. This affects, not only freight and passenger volume, but also the attitude of voters on the railroads' efforts to secure desirable legislation.

LYNE

The snappy young women who are the airlines' direct contact with the public have done more to promote air travel (I would guess) than all the fancy technology that the airlines have at their disposal. I note also that the airlines take these gals out of direct public contact, and get them behind the scenes, when they attain the ripe old age of 35 or so.

The airlines seem to believe the average passenger prefers younger women and their record of success speaks for itself. The all-male tradition for train help on the railroads is deeply rooted. I wonder if it is wholly justifiable, under present conditions.

FIRST COWCATCHER—Bill Gorman of Mutual Magazine (PRR) tells me he dug into the cowcatcher question some years ago and learned that the first device used to get bossy and her brethren out of the way was a pole, which damaged the animal but didn't necessarily move it off the tracks. Bill believes the first real "cowcatcher" was that on the PRR's John Bull locomotive, now for a long time on display at the Smithsonian Institution.

Bill goes on to report that the first PRR electrics were "square fronted," but the wedge principle of the cowcatcher was reverted to—to shove obstacles from the tracks sideways—rather than putting them in the engine crew's laps.

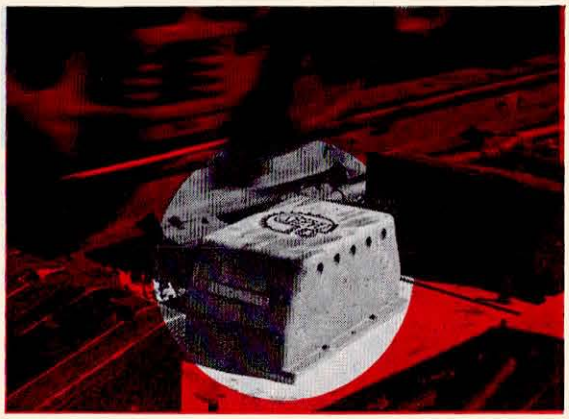
Cowcatchers were not always successful in thus protecting enginemen, as I know from observation. Such encounters were almost as unpleasant (but less permanently so) for the enginemen as for the cow.

GUESS WHO THIS COULD BE—As to how retired railroaders find ways to use their spare energies—here are a few assignments one of them is fulfilling: trustee of a local secondary school, head of board of his town library which has a building program under way, chairman of Rotary Club program committee, trustee and zoning officer of his town, cemetery trustee, VP of a dramatic club, curator for local historical society, chief fund raiser for a nursing association, head canvasser for his church. Is active in railway historical society and keeps in touch with his congressmen on railway legislation.

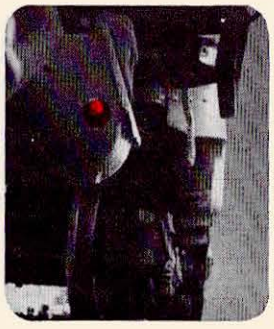
If you haven't identified this busy pensioner already—he is the widely known Murray Campbell, who used to be B&O's VP at Chicago. Looks to me as if he must be as constructively busy now as he ever was when he was paid for it. "The rocking chair is not standard equipment for the retired fellow, unless he wants it to be that way"—so Murray writes.

OUR PAMPERED PETS—A friend of mine, who spends his time looking for freight traffic opportunities, is examining the pet food business which he tells me amounts to $575,000,000 annually. The dog population (or should it be "canitation") is 26,000,000 pooches, which consume $400,000,000 of commercial dog food. There are 29,000,000 cats and they make away with only $75,000,000 of commercial food. My friend tells me 80% of all dogs get commercial food—a lot of them doubtless eating more sumptuously than most people.

FAMILY OF FREIGHT HANDLERS—There are four brothers named Sanschagrin who are working at the CPR's Mile End freight house at Montreal, with combined service of 110 years. CPR's P. T. Cole, who told me about them, believes this is the largest number of brothers any railroad can show—all of them doing the same kind of work at one place and time, on any one railroad. And a free translation of their French name into English would be "no regrets." The size of many of these French Canadian families makes them tough contenders to equal, for such records as this.



See how hot every journal box is... without ever touching it!



The film strip shown here graphically portrays the principle of the patented *slant-aspect viewing* method employed by the SERVOSAFE® Hot Box Detective*, amazing infrared device that inspects every journal box on moving trains to determine which wheel bearings may be running dangerously hot.

Note how the spot moves diagonally across the journal box surface. This "scanner-eye-view" illustrates how the infrared eye of the Hot Box Detective sweeps the entire trailing (or leading) surface of the journal box. These surfaces, using the bottom of the car as a reference, are the accessible viewing areas which most rapidly reflect temperature changes of the bearing itself.

The SERVOSAFE Hot Box Detective thus assures reliable inspection of every passing train in both directions.

Through instant detection of hot boxes—and potential hot boxes—this patented infrared device is helping to solve the railroads' primary operating problem: the principal cause of derailments, damage, and delay.

Figure 1—Tests prove that the trailing surface of the journal box presents the optimum accessible area for hot box inspection. Presenting a low-mass path of thermal flux from the bearing, the trailing surface responds most rapidly to actual bearing temperature changes.

Figure 2—Illustration of typical bearing assembly shows how infrared SERVOSAFE Hot Box Detective detects heat. T_1 is the temperature of the journal-bearing interface. T_2 is the proportional temperature conducted to the trailing surface of the journal box.

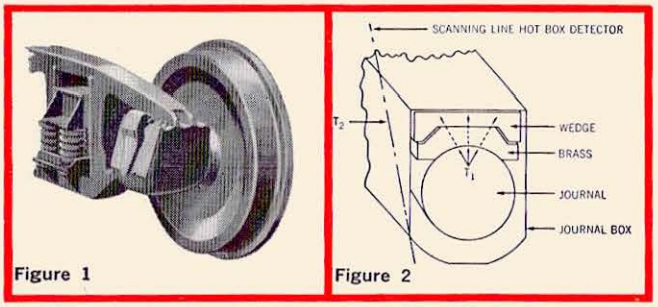


Figure 1 Figure 2

RAILROAD PRODUCTS DIVISION

SERVO CORPORATION OF AMERICA

111 New South Road • Hicksville, L. I., N. Y., U.S.A.

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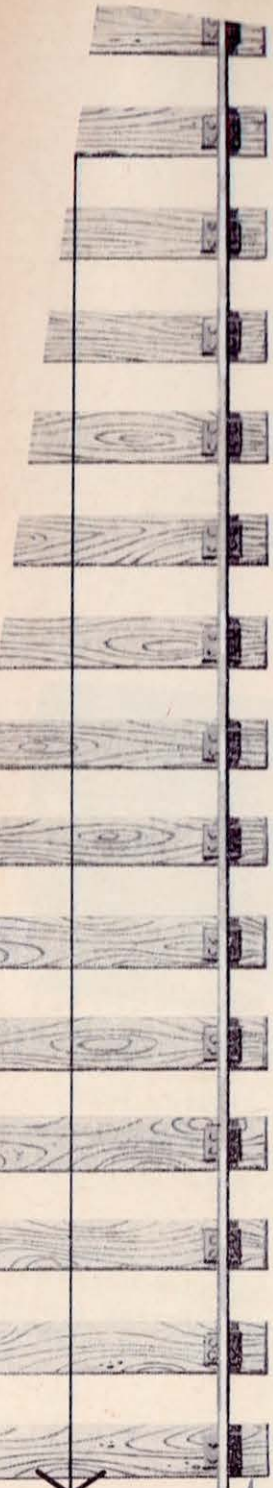


If it rolls on rails it should be cushioned by WAUGH

WAUGH

EQUIPMENT COMPANY

332 SOUTH MICHIGAN AVENUE
CHICAGO, ILLINOIS 60604

NEW YORK / ST. LOUIS
SAN FRANCISCO
RICHMOND / MONTREAL

SYMINGTON WAYNE RAILROAD EQUIPMENT

Superior Longitudinal Cushioning

William B. Hansen
CSS&SB

Charles P. Turner
LV

William E. Lehr
PRR

Robert A. Miller
SP

PEOPLE IN THE NEWS

AKRON, CANTON & YOUNGSTOWN.—**B. G. Hudson,** supervisor of bridges and buildings and roadmaster, Roanoke, Va., Terminal, **Norfolk & Western,** appointed chief engineer, AC&Y, Akron, Ohio.

ATLANTIC COAST LINE.—**R. Frank Dickinson,** general perishable agent, Orlando, Fla., appointed manager perishable traffic—sales.

BALTIMORE & OHIO.—**Roger R. Ricker,** supervisor of materials, Baltimore, Md., appointed assistant general storekeeper, Central Region, Pittsburgh, Pa. **Italo Damiani,** assistant storekeeper, DuBois, Pa., named division storekeeper there, succeeding **Frederick L. Nelson,** who succeeds Mr. Ricker as supervisor of materials, Baltimore.

CHICAGO & NORTH WESTERN.—**Richard D. Johnson** named staff assistant-public relations, Chicago.

CHICAGO SOUTH SHORE & SOUTH BEND.—**William B. Hansen,** general freight agent, Chicago, appointed freight traffic manager.

DELAWARE & HUDSON.—**Richard P. Keating,** assistant to general passenger agent, promoted to general passenger agent, New York, succeeding **George T. Althisar,** who retired April 1 after 46 years of service. **Cornelius D. Barnard,** Lieutenant of Police, Albany, N.Y., retired April 1 after 48 years of service.

KANSAS CITY SOUTHERN.—**J. H. McMahon** named freight traffic manager, Kansas City, Mo., to succeed **W. R. Henry,** who retired March 31 after more than 41 years' service. **E. E. Snodgrass** appointed assistant freight traffic manager, Kansas City.

FRISCO.—**W. E. Akin,** sales representative, appointed district sales manager, Indianapolis, to replace **E. C. Hunt,** who retired March 31 after nearly 44 years' service.

LEHIGH VALLEY.—**Charles P. Turner** has been appointed chief mechanical officer, Savre, Pa., (RA, April 6, p. 33), succeeding **William E. Lehr,** named chief mechanical officer, **Pennsylvania,** Philadelphia. Mr. Turner was formerly superintendent locomotive equipment.

NICKEL PLATE.—**C. Gordon Cruickshank,** assistant vice president—sales, Cleveland, appointed assistant vice president—marketing and rates there. **Kenneth B. Chilcot,** assistant vice president—rates, Cleveland, named assistant vice president—sales there. **Richard A. Julian** and **Harold Wilding,** freight traffic managers at New York and Chicago, respectively, promoted to assistant vice president—sales at those points. **F. G. Altenburg, John T. Grant** and **H. E. Draper,** general freight agents at Chicago, New York and Indianapolis, respectively, promoted to freight traffic managers at those points. **John C. Jones, Robert J. Brent** and **Paul E. Needham,** general agents at Detroit, Mich.; Houston, Tex.; and Pittsburgh, Pa., appointed general freight agents at those points.

PENNSYLVANIA.—**William E. Lehr** appointed chief mechanical officer, Philadelphia, with responsibility for maintenance of locomotives and freight and passenger cars, and operation of all shops on the system, succeeding **Richard E. Franklin,** who has joined the **Southern** as vice president—assistant to the president (RA, April 6, p. 33).

READING.—**H. O. Ludwig** appointed assistant superintendent—car equipment and **R. R. Eyrich** named assistant superintendent—car inspection and maintenance, both at Reading, Pa. Abolished positions of car department general division supervisors, Reading Terminal, Philadelphia, formerly held by Messrs. Ludwig and Eyrich. **E. H. Follweiler** appointed division general supervisor—locomotives and cars, Reading Terminal, Philadelphia.

ROCK ISLAND.—**Arthur E. Anderson,** superintendent, Southern division, El Reno, Okla., appointed assistant general manager, First District, Des Moines, Iowa, to succeed **Robert H. Anderson,** elected president and general manager, **Houston Belt & Terminal,** Houston, Tex. **William J. Pasta,** superintendent, Arkansas division, Little Rock, Ark., transferred to El Reno to succeed Mr. Anderson, and in turn is replaced by **David E. Visney,** assistant superintendent, Des Moines division.

SANTA FE.—**W. E. Brack** named acting assistant general manager, Western Lines, Amarillo, Tex., replacing **J. H. Blake,** on temporary leave of absence.

SOUTHERN PACIFIC.—Has consolidated the Coast division with the Western and the Los Angeles divisions. Lines from San Francisco to San Luis Obispo have been included in an expanded Western-Coast division under the jurisdiction of **D. R. Kirk,** superintendent, with headquarters at Oakland and San Francisco. Lines in San Luis Obispo and south to Santa Barbara have been added to the Los Angeles division, headed by **J. H. Long,** superintendent. **Robert A. Miller,** superintendent, Coast division, ad-

Samuel B. Burton
SP

Kenneth K. Schomp
SP

Carl A. Ball
SP

Joseph M. Gentry
Wine

Walter H. Pogue, Jr.
GATC

C. B. Ramsdell
US&S

vanced to assistant to the vice president. **Samuel B. Burton,** superintendent, Sacramento-Salt Lake division, named assistant general manager, San Francisco, to succeed **John A. McKinnon,** who retired March 31. Mr. Burton's successor is **Robert R. Robinson,** superintendent, San Joaquin division, Bakersfield, Calif., who in turn is replaced by **Wade C. Morris,** transferred from Dunsmuir, Calif.

Kenneth K. Schomp, manager of personnel, promoted to assistant to the vice president. Mr. Schomp's successor is **Carl A. Ball,** first assistant manager of personnel, who in turn is succeeded by **Lee W. Sloan,** assistant manager of personnel. **P. K. Larson,** examiner, replaces Mr. Sloan.

TOLEDO, PEORIA & WESTERN.—Charles L. Pattison, vice president-controller, elected executive vice president. **Walter J. Nelson,** general accountant, advanced to general auditor, and **W. A. Green,** treasurer, promoted to general accountant and treasurer.

UNION PACIFIC.—Neal T. DeLong appointed assistant to vice president-labor relations, succeeding **J. T. Singent,** retired.

Supply Trade

Joseph M. Gentry has joined the **Wine Railway Appliance Co.** as east coast sales representative. Mr. Gentry will call on car builders and railroads along the coast from Jacksonville, Fla., his headquarters, to Washington, D.C., and on into Louisville, Ky., and Montgomery, Ala. Mr. Gentry was formerly chief draftsman for the **Atlantic Coast Line.**

Walter H. Pogue, Jr., regional sales manager, freight car division, **General American Transportation Corp.,** has been appointed manager of railroad sales for the division.

C. B. Ramsdell has been appointed to the newly created position of manager—mass transit, **Union Switch & Signal Division of Westinghouse Air Brake Co.** (RA, April 6, p. 38). Mr. Ramsdell, formerly with General Electric, will direct the design, sales and delivery of systems or subsystems for the mass-transit market.

Herman C. Gildner has been named assistant regional sales manager, **The Adams & Westlake Co.,** at Chicago.

Don De Ruiter has been named southeastern sales representative for the Equipco Hand Brake and Equipment Specialties division of **UNARCO Industries, Inc.,** Chicago.

David J. Champion has joined **Republic Steel Corp.,** Cleveland, Ohio, as manager of trade relations and railroad sales, succeeding **A. A. Snowball,** recently named assistant manager, Pipe Sales Division. Mr. Champion was formerly vice president of Champion Rivet Co., Cleveland.

C. Edward Elkins, engineering manager, **Noller Control Systems, Inc.,** Richmond, Calif., has been promoted to assistant general manager.

Eastern Railway Supplies, Inc., New York, **St. Louis Railway Supply Co.,** St. Louis, Mo., and **T. F. and H. H. Going,** Louisville, Ky., and Ocala, Fla., respectively, have been signed to represent **Fremont Industries** line of railroad maintenance chemicals.

The ACF Trailer Hitch, a tiedown device for securing highway trailers to piggyback flatcars, formerly manufactured exclusively in the United States, now will be made also in Canada. **ACF Industries (Canada) Limited** will handle the marketing of the device which will be made in Trenton, N.S. under a manufacturing agreement with a subsidiary of **Hawker Siddeley Canada, Ltd.**

The **Trailmobile Division of Pullman Incorporated** has appointed **Kircher, Helton & Collett, Inc.,** Cincinnati and Dayton (Ohio) advertising, marketing and public relations agency, to handle its advertising program. **H. E. Petersen** is account executive at 1904 Carew Tower, Cincinnati.

R. J. Rutherford has been elected a vice president of **Vapor Corp.,** Chicago.

T. A. Stewart, assistant manager of **Vapor Corp.'s** St. Paul office, has been named manager of the St. Paul-Omaha territory, succeeding **W. W. Orr,** appointed manager of the Philadelphia territory.

The Aluminum Co. of America, Pittsburgh, Pa., has announced the appointment of **William F. Lowry III** as manager, Railroad and Marine Sales Division, succeeding **James A. Burt,** advanced to industry manager, Building Products sales.

Edward S. Cisco, former chief engineer of **Standard Railway Equipment Co.,** has joined **Evans Products Co.** as a project engineer on the company's new coiled steel car. Mr. Cisco will be located at Evans' Transportation Equipment Division headquarters at Plymouth, Mich.

William C. Hurson, assistant vice president, **Youngstown Steel Door Co.,** Cleveland, has been promoted to vice president—administration.

Harry B. Nordstrom, Jr., has been named sales manager, railroad sales, Industrial Division, **General Battery & Ceramic Corp.** A former sales engineer for **Magnus Metal Corp.,** Mr. Nordstrom was vice-president sales, Automatic Metal Banding Co., prior to joining GB&C.

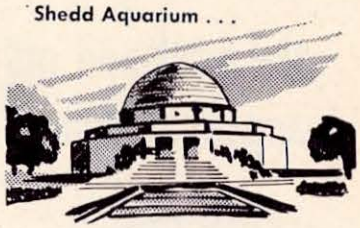
WABCO, in conjunction with **Southern Iron & Equipment Co.,** has established the Westinghouse Air Brake Division's Distribution Center at 5522 Peachtree Road, Chamblee, Ga., for prompt delivery of renewal parts to railroad customers in the Southeast.

The Okonite Co., subsidiary of Kennecott Copper Corp., has opened a modern automated warehouse in the city of Commerce, Calif., to speed shipments of wire and cable to the Los Angeles area.

OBITUARY

John J. Quinn, 84, retired chairman, **National Perishable Freight Committee,** died April 4 in St. Francis Hospital, Evanston, Ill.

Shedd Aquarium . . .



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MARKET OUTLOOK

Carloadings down

Loadings of revenue freight in the week ended April 4 totaled 519,494 cars, the Association of American Railroads announced on April 9. This was a decrease of 8,663 cars, or 1.6%, compared with the previous week; a decrease of 26,527 cars, or 4.9%, compared with the corresponding week last year; and a decrease of 28,180 cars, or 5.1%, compared with the equivalent 1962 week. Ton-miles generated by carloadings in the week ended April 4 are estimated at 11.4 billion, a decrease of 1.6% below the corresponding week of 1963 but an increase of 3.2% above the 1962 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, April 4

District	1964	1963	1962
Eastern	77,255	79,058	82,250
Allegheny	86,168	93,355	94,146
Pocahontas	45,011	48,510	46,620
Southern	110,671	117,432	113,977
Northwestern	56,881	56,825	57,935
Central Western	106,791	112,019	113,386
Southwestern	36,717	38,822	39,360
Total Western Districts	200,389	207,666	210,681
Total All Roads	519,494	546,021	547,674
Commodities:			
Grain and grain products	43,086	52,485	51,611
Livestock	2,146	3,317	4,208
Coal	87,734	94,027	87,812
Coke	8,438	8,115	8,497
Forest Products	38,818	36,453	37,148
Ore	20,622	15,933	19,108
Merchandise l.c.l.	13,679	18,664	25,106
Miscellaneous	304,971	317,027	314,184
Apr. 4	519,494	546,021	547,674
Mar. 28	528,157	558,613	565,098
Mar. 21	537,056	534,998	555,873
Mar. 14	521,250	517,209	545,434
Mar. 7	518,474	517,757	525,696
Cumulative total, 14 weeks	7,313,902	7,145,133	7,449,736
Estimated Revenue Ton-miles (millions) 14 weeks	166,300	156,300	155,200

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Mar. 28 totaled 16,512 cars, compared with 16,449 for the corresponding 1963 week. Loadings for 1964 up to Mar. 28 totaled 205,927 cars, compared with 186,899 for the corresponding period of 1963.

IN CANADA.—Carloadings for the seven-day period ended March 21 totaled 68,589 cars, compared with 69,033 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
March 21, 1964	68,589	24,589
March 21, 1963	60,530	24,175
Cumulative Totals		
March 21, 1964	789,728	291,174
March 21, 1963	691,528	257,523

FREIGHT-TRAIN CARS

► *Bangor & Aroostook.*—Ordered 100 mechanical refrigerator cars equipped with cushion underframes and load dividers from Pacific Car & Foundry, at a cost of approximately $3 million. Delivery is scheduled for this summer.

► *Canadian Pacific.*—Ordered 200 70-ton flat cars from the Dosco Works at Trenton, N.S., at a cost of $2.5 million. The cars will be equipped with roller bearings, and delivery is scheduled for the fall.

► *Gulf, Mobile & Ohio.*—Ordered 25 61-ft flat cars equipped with roller bearings and chain tie-down devices from Thrall at a cost of $400,000. Delivery will begin in July.

► *Mississippi Central.*—Leased five 4,500-cu-ft-capacity wood chip hopper cars from United States Railway Equipment.

► *Norfolk & Western.*—Ordered 25 70-ton 2,600-cu-ft capacity Airslide covered hopper cars from GATC, at a cost of $350,000. The cars will be equipped with roller bearings, and deliveries begin in the fall.

LOCOMOTIVES

► *Canadian National.*—Ordered two 424 Century series 2,400-hp locomotives from Montreal Locomotive Works.

► *Gulf, Mobile & Ohio.*—Ordered 12 2,500-hp diesel-electric units from EMD at a cost of $2.4 million. Delivery will begin in July.

► *Louisville & Nashville.*—Ordered six Century 420 2,000-hp GP road switchers from Alco, and 14 U25B 2,500-hp units from General Electric. The 20 locomotives are in addition to the 12 2,750-hp Alco units previously reported (RA, Apr. 6, p. 37).

► *Picklands Mather & Co.*—Ordered eight 1,800-hp road switcher locomotives from Montreal Locomotive Works, for operation on the Wabush Lake and the Arnaud Railways.

FOREIGN

► *Colombia.*—Ferrocarriles Nacionales de Colombia ordered 11 GR-12 1425-hp locomotives from General Motors Overseas at a cost of $2.2 million. The 11 narrow-gauge units will be built by EMD.

► *Peru.*—Cerro de Pasco Railway ordered two GR-12 1425/1310-hp and one GA-8 950/890-hp locomotives from General Motors Overseas. The two mainline units and one switching diesel-electric unit will be built by EMD.

NEW FACILITIES

► *Chicago & North Western.*—Placed a $112,000 order with General Railway Signal for new type E electric car retarders to be installed at Proviso, Ill. classification yard.

► *Spokane, Portland & Seattle.*—Will repair its steel bridge No. 9.3 over the Columbia River between Portland, Ore., and Vancouver. The work which is being handled by the General Construction Co., Portland, and by the road's B&B crews, is scheduled for completion this fall. Cost of the project will exceed $100,000.

► *Toledo, Peoria & Western.*—Plans to lay 13 miles of continuous welded rail in 1964.

YOU OUGHT TO KNOW

Big show in 1967: Tentative plans have been made for another exposition starting Saturday, Oct. 7, 1967, and ending Friday, Oct. 13. It will be held in Chicago with meetings and indoor exhibits at McCormick Place and a track exhibit at Illinois Central's 31st Street yards. Except for starting on a weekend, it will be patterned after the highly successful American Railway Progress Exposition held Oct. 9-16, 1963, and attended by an estimated 75,000 persons.

Automatic locomotive tests: Now under consideration is computer-type test equipment to check out electrical systems of diesel-electric locomotives. Exploratory work has been done on the Baltimore & Ohio, where successful performance at demonstrations resulted in a meeting of railroad men April 8 in Chicago to clarify specifications for railroad needs. The equipment is a development of California Technical Industries, a division of Textron, Inc.

ACI for piggyback trailers: Sylvania Electric Products Inc., has adapted its automatic car identification system to piggyback trailers mounted on flat cars traveling up to 60 mph. Identification of a colored label on the trailer is automatic. Printout of the information could be on a paper tape locally, or data can be transmitted over conventional teleprinter or data communications circuits. Labeling on each trailer would consist of colored strips of 3M Co.'s Scotchlite retroreflective material. It could indicate trailer number, ownership, type of cargo or weight of trailer. Cost of labeling is said to be less than $2 per trailer.

Facsimile-microwave net studied: An eastern railroad is studying the feasibility of installing a facsimile-microwave system connecting its major yards and terminals to headquarters. Basic car information such as that contained in waybills, train consists and other data would be "faxed" to the general office for processing. A centralization of paperwork and improved communications would be major benefits, the road reports. The system under study would be similar to one now in service on the Denver & Rio Grande Western (RA, June 26, 1961, p. 9).

'Century' face-lifting: A handsomely refurbished "20th Century Limited" will be New York Central's World's Fair "exhibit." In anticipation of heavy Fair traffic, NYC has spent $250,000 overhauling the 32 cars assigned to its premier New York-Chicago trains.

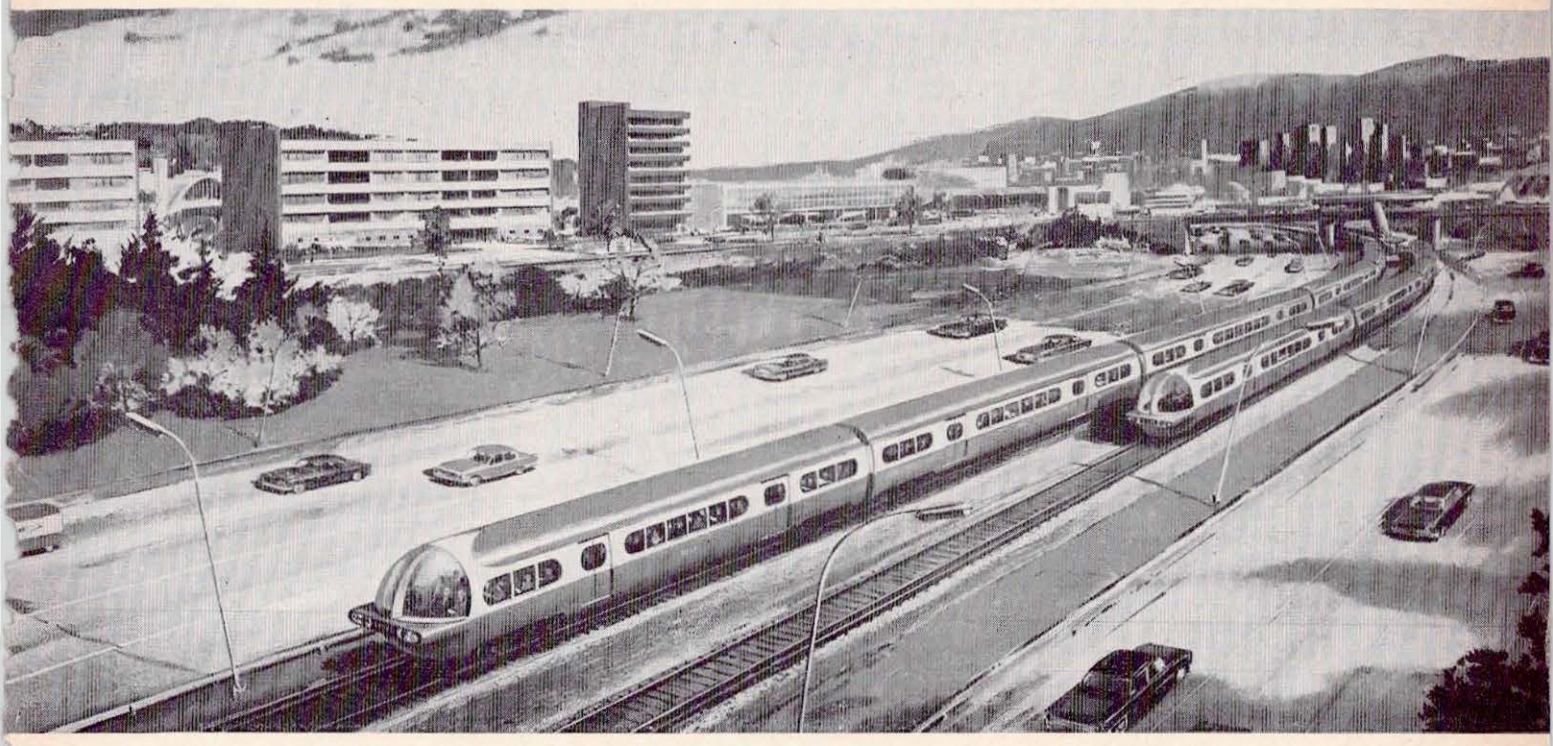
More pay for signalmen? Presidential emergency board No. 159 has recommended that railroad employees represented by the Brotherhood of Railroad Signalmen should receive a general wage increase of 6 cents per hour. Also, the Board recommends that skilled workers represented by the BRS including signalmen, signal maintainers and all other equal or higher rated employees should receive an additional increase of 4 cents per hour. Both raises would be effective January 1, 1964. No word was available from the BRS or railroads represented by the Eastern, Western and Southeastern Carriers' Conference Committees as to whether they would abide by the Board's decision, which is a recommendation only and is not binding on the parties.

A new record for C&O: It wasn't Chesapeake & Ohio's fault that a new one-day record for coal dumped at Newport News, Va., wasn't a better one. C&O set the new mark March 31, when 114,359 tons of coal passed over its two piers. It surpassed a previous high of 109,394 tons, set almost seven years ago. But the new mark could have been higher. Said Superintendent C. C. Savage: "We ran out of vessels."

For Soo: Mail or no mail? With the "appropriate officer" of the Post Office Department not available to make a decision until mid-April, Soo Line is asking the department's top man—Postmaster General John A. Gronouski—for a prompt decision on whether mail now carried on four Soo Line trains will stay on the rails for another five months or be shifted to trucks April 24-25. Soo wants to drop the trains—but to reduce the impact of discontinuance on the company and its employees, the road has asked for a five-month extension of mail contracts.

Current statistics

Net income, estimated	
12 mos., 1963	$651,000,000
12 mos., 1962	572,000,000
Carloadings, revenue freight	
14 wks., 1964	7,313,902
14 wks., 1963	7,145,133
Freight cars on order	
Feb. 1, 1964	37,636
Feb. 1, 1963	17,565
Freight cars delivered	
1 mo., 1964	5,253
1 mo., 1963	2,445
Serviceable cars	
Mar. 1, 1964	1,411,426
Mar. 1, 1963	1,416,368



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GENERAL ELECTRIC

Frisco builds racks fast to get automobile traffic

The Frisco needed 50 more automobile rack cars in a hurry. In mid-December 1963 the road made a commitment to supply the equipment by March 1, 1964, for a substantial increase in automobile traffic.

To meet the deadline the road decided to design and build its own bi-level and tri-level superstructures. Then it would add them to existing 89-foot TTX cars, with 10-inch hydraulic end cushioning, at its Springfield, Mo., car shops.

● **Pioneer work.** Frisco's design, development and use of multi-level cars dates back to February 1959, when the road pioneered the first bi-level car. Then followed development of the long tri-level car with the cushion underframe. This prototype 83-foot car (built by Pullman-Standard in 21 days to Frisco design and specifications) was delivered in January 1960. The road also designed and built the first movable cushioned rack on an 85-foot flat car in March 1960.

"This varied experience," Frisco officers say, "and that gained in past years' operations with our own, as well as with various manufactured rack cars, gave the mechanical department valuable information in designing a car to meet the now-existing requirements and service expected from such equipment. Being familiar with all the advantages and disadvantages of present equipment and with strong beliefs and reservations as to what type of construction was needed, the present design was evolved."

● **Metal fatigue.** The road's experience had determined that most failures are due to repeated loadings of the structural members, thus causing eventual fatigue of the metal. Design criteria must consider the thickness and shape of members and the nearness of bolt holes to their edges. The superstructure was designed to withstand a 4G longitudinal impact and a 1G lateral impact under full load. Also designed into the structure was a factor of safety for vibration and repetitious loadings.

All structural parts which could be designed with standard mill rollings were utilized to reduce the time and material used in fabrication to a minimum. Cor-Ten steel was used throughout, producing a greater strength-weight ratio than mild steel. All parts were joined by welding, except for bolting the decks to the posts and bolting deck sections together. To reduce cutting time, all steel, except such things as gussets, was bought to size.

● **Assembly-line operation.** A traveling jig was made for the deck sections to permit fabrication at stations, using assembly line methods. These sections, along with the posts and other details, were built in the freight car shop and moved by truck to the TTX cars in the consolidated shop. There, the decks were finish-welded by hand and by automatic machines, and tie-down tracks were added. The winches, idlers, tie-down tracks and bridge plates were purchased items.

Pre-assembly of the entire superstructure was done off the car. A scaffold jig was used on which the deck sections were placed and posts bolted to the deck gussets.

After the superstructure was placed on the car by overhead cranes, the bottom ends of the side posts were welded to the car side sills. ■

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by Lawrence W. Sagle

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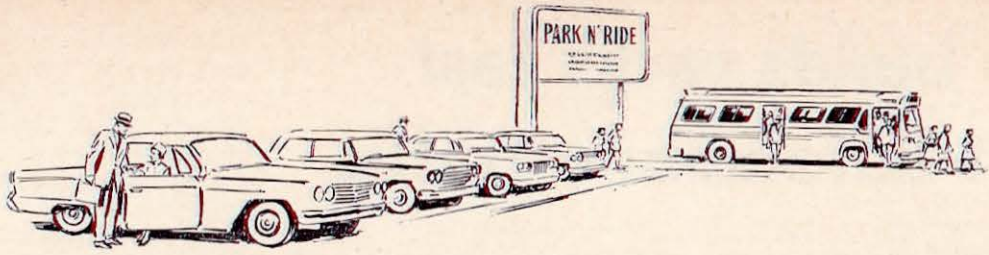

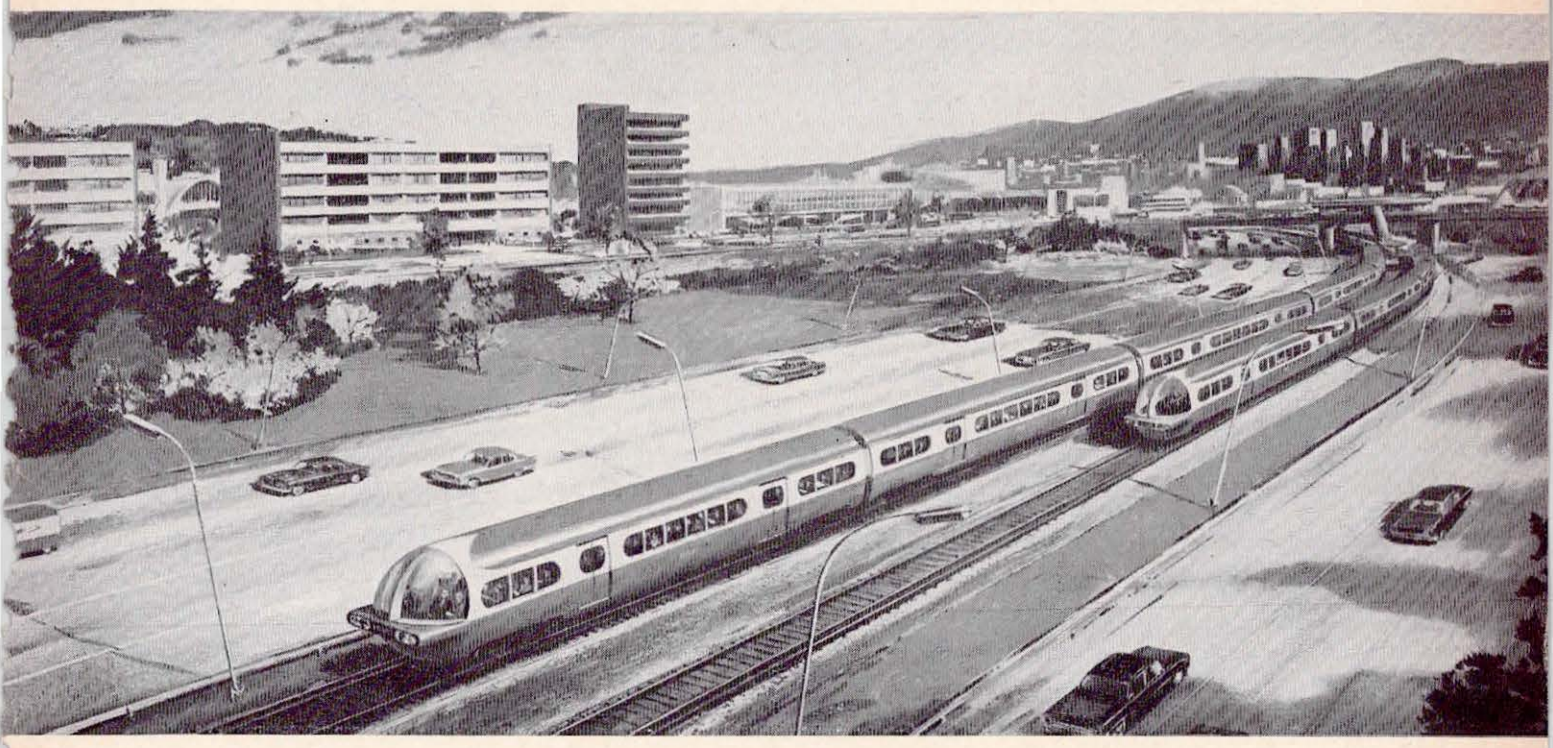

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Labor peace: up to Uncle Sam

Mr. Arpaia suggests setting up a continuing tribunal, with decisions binding for two years, on disputes negotiators can't settle.

Former Commissioner Anthony Arpaia (now vice president, REA Express) has made a public address, on management-union relations in the railway industry, which merits the attention of leaders on both sides of the conference table. While Mr. Arpaia is now, technically speaking, on the "management side"—from his position with the Express Agency—he continues to speak on transportation policy questions in the light of his background as an experienced and disinterested public official. If he is a partisan, then his partisanship is exercised in behalf of the public interest. He obviously is not voicing a "management viewpoint."

In his address (briefly mentioned in our last week's issue, p. 7) Mr. Arpaia reviewed the high points of the history of union-management conflict on the railroads—the 1877 riots, the 1894 "Pullman" strike, the circumstances surrounding the enactment of the Adamson Act in 1916. He took notice of the federal government's seizure of the coal and steel industries and the railroads, during periods of post-war "national emergency"—a condition not now prevailing. He did not look with favor on such *ad hoc* dealing by government with specific controversies, nor with the special legislation last August which prevented (or, at least, postponed) a general shut-down on the railroads.

He conceded that "damaging strikes must be avoided." There are difficult issues, however, for which "some solution must be found." The problem is to arrive at an answer that will be fair to both sides, while protecting the public interest in uninterrupted service. He would not turn to an outright ban on all strikes in transportation, nor to wage-fixing by bureaucrats. He has his doubts about applying the anti-trust laws to unions. If nation-wide strikes were forbidden—the privilege of striking against one railroad or one territory at a time could still do the country a great deal of harm.

Looking over all the alternatives he could think of, Mr. Arpaia concluded that the best available solution is "binding arbitration" on all important issues that cannot be settled by direct negotiation.

The distinction between the kind of arbitration Mr. Arpaia proposes, and that usually practiced, is that Mr. Arpaia's arbitrators would be a continuing tribunal—not a special body convened to decide a specific dispute and then disband. When a special body is assigned to a specific issue, the members are all too likely (Mr. Arpaia believes) to bring the political climate of the moment into their deliberations. If high-caliber people were named to a permanent tribunal (for long terms) in advance of any pending disputes, they could be expected to deal objectively with the issues.

To avoid unnecessary coercion, Mr. Arpaia would make the decisions of his proposed tribunal binding for only two years—after which either party could call for a further review of the case, in the light of two years' actual experience.

There is, unfortunately, insufficient space here to present all the arguments Mr. Arpaia put forward in support of his proposal, or to raise critical questions as to important details. Those who have serious interest and responsibilities in union-management relations on railroads will undoubtedly want to get a copy of the address and study it for themselves. But the problem to which Mr. Arpaia addresses himself is not yet solved, and its solution is imperative in the public interest. Somehow, the government-created vacuum in labor relations on railroads has got to be corrected.

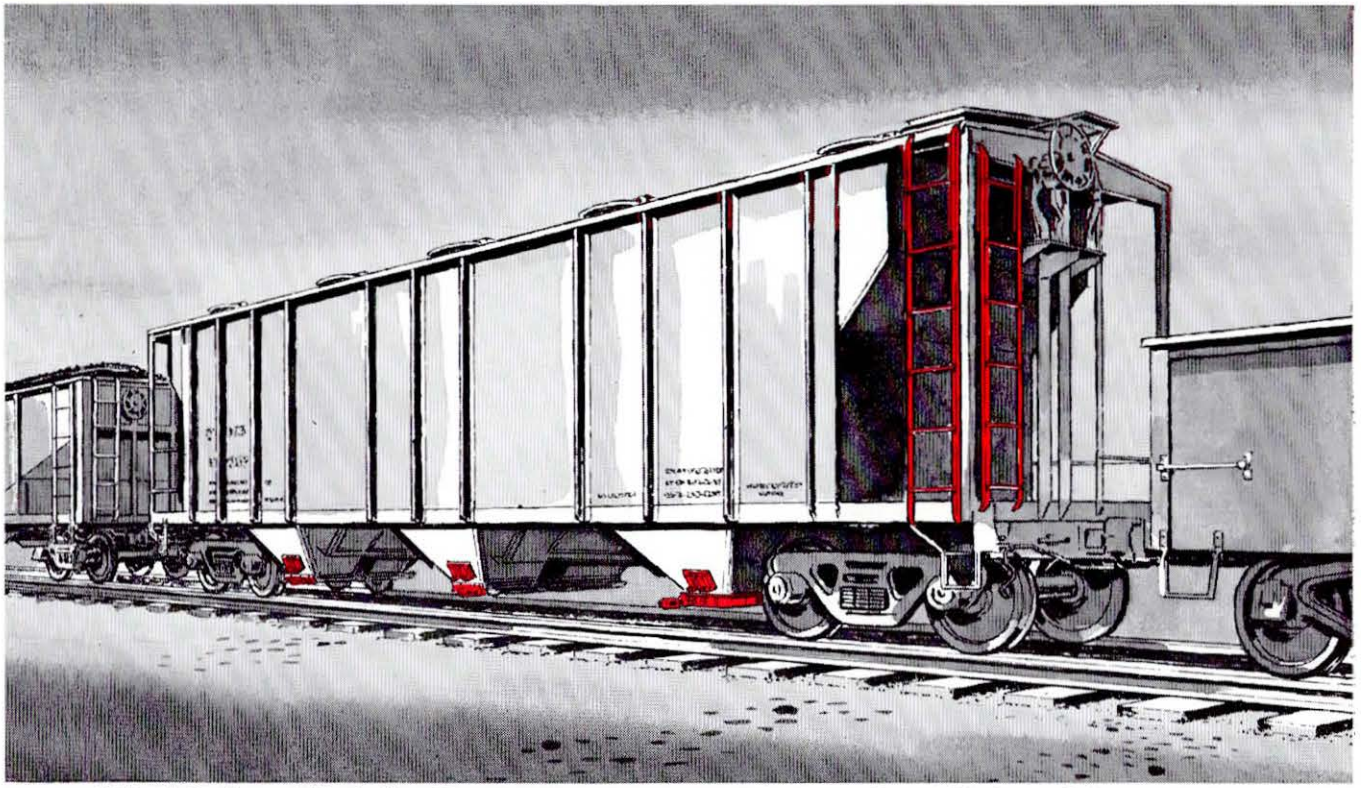
Why railroad strikes are intolerable

The government—by limiting the use of injunctions and its provision that railway strikers are to be paid strike benefits at railroad expense—has made it extremely difficult for the railroads, acting alone, to combat a nation-wide strike effectively. Such a strike would do incalculable harm to the national economy and national defense. It is as much government's duty to block such work stoppages, as to repel invasion by external enemies.

Some people who oppose what they call "compulsory arbitration" or "governmental interference" neglect to discern the fundamental difference between a work stoppage on railroads and in other essential industries, such as coal or steel or automobiles. The difference is that coal, steel, and automobiles can be stockpiled. A strike of a few days' or even a few weeks' duration in these important industries would not interfere immediately with the functioning of the whole economy, as would a large-scale strike in transportation, communication or utilities.

Government cannot tolerate large-scale strikes in transportation and utilities and remain any longer an effective government. If free men do not have sense and self-discipline enough to keep their necessary productive activities going, then they cannot expect to remain free men very long.

If railroads were shut down nationally for a week or so—aside from the lethal effect on the whole economy—what would be the permanent effect on railroad traffic and railroad jobs?



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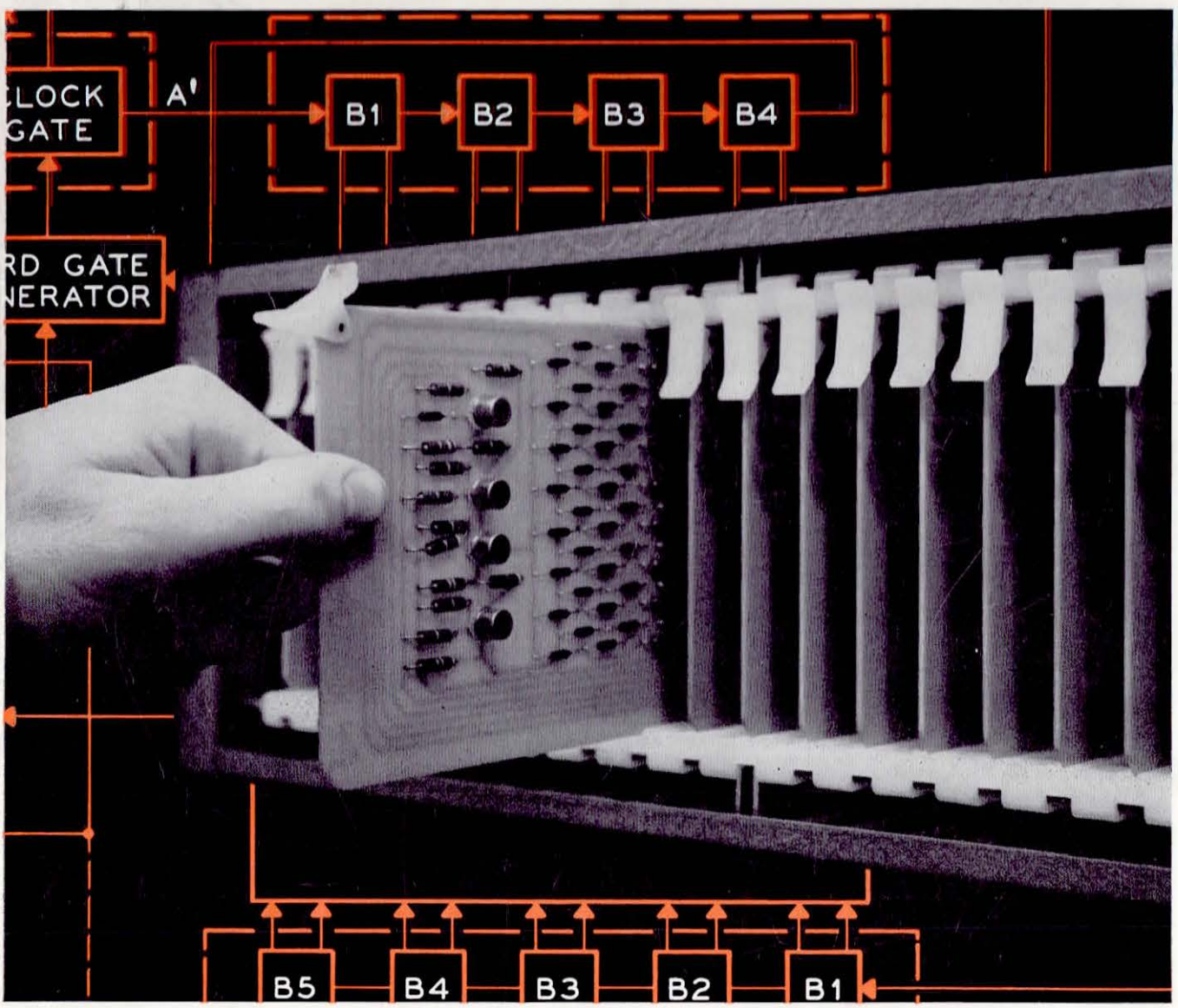

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